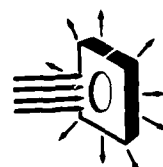
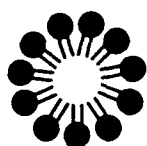




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Materials Science and Engineering

1989 Publications

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MATERIALS SCIENCE AND ENGINEERING

1989 Publications

This publication lists results of research conducted on materials by scientists and engineers from the Naval Research Laboratory (NRL) that appeared in the open literature during 1989.

The research was generally conducted within the Materials Science and Component Technology Directorate. However, research at NRL has a multidisciplinary approach; strong collaborative efforts are conducted with other organizational components of the Laboratory.

For the research publications noted here, joint research was conducted with the Condensed Matter and Radiation Sciences Division.

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Unpublished	<input type="checkbox"/>
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MATERIALS SCIENCE AND ENGINEERING

STRUCTURE OF MATTER

"Alterations in the Stereochemistry of the Kappa- Selective Agonist U50,488 Result in High Affinity Sigma Ligands"

B.R. deCosta, W.D. Bowen, S.B. Hellewell, C.F. George, R.B. Rothman, A.A. Reid, J.M. Walker, A.E. Jacobson, K.C. Rice

Journal of Medicinal Chemistry, 32(8), 1996-2002

"Structure of 2,4,6-Trinitro-phenylhydrazine"

J.L. Flippen-Anderson, R.D. Gilardi, C.F. George, A.P. Marchand, P.R. Dave
Acta Crystallographica, C45, 1171-1174

"Structure of a 3-Methylpentacyclo [5.4.0.0(2,6).0(3,10).0(5,9)] undecane-8,11-dione Monoethylene Ketal"

C.F. George, R.D. Gilardi
Acta Crystallographica, C45, 1244-1246

"Structure of a Cage Dimer (I) and a Dimer Ketone (II) Formed via Thermal Reaction of Ethyl 3-Phenyl-2-norbornadiene-carboxylate with Pentacarbonyliron"

J.M. Karle, I.L. Karle
Acta Crystallographica, C45, 1248-1250

"Structure of an Ether Dimer of Deoxy-dihydroqinghaosu, a Potential Metabolite of the Antimalarial Arteether"

R.D. Gilardi, C.F. George
Acta Crystallographica, C45, 1262-1263

"Structure of Diethyl 3,6-Dihydroxy-11,11-dimethoxypentacyclo [6.5.0.0(4,12).0(5,10).0(9,13)]-tridecane-2,6-diene-2,7-dicarboxylate"

J.L. Flippen-Anderson, R.D. Gilardi, C.F. George, A.P. Marchand, G.M. Reddy
Acta Crystallographica, C45, 1548-1551

"Structure of Two Cyano Nitramines (I): 1-Benzylnitrocyanamide and (II): 1.4-Nitrocyanamidylbutane"

J.L. Flippen-Anderson, R.D. Gilardi, C.F. George
Acta Crystallographica, C45, 661-663

"Colchicine Models: Synthesis and Anti-tubulin Activity of 2'-Monosubstituted and 2',5'-Disubstituted 2,3,4,5'-Tetramethoxy-1,1'-bipheyls"

J.L. Flippen-Anderson, C.F. George, Y. Itoh, A. Brossi, E. Hamel
Helvetica Chimica Acta, 72, 196-204

"Structure of 1,9-Diacetyl-3,5,7-trinitro-1,3,5,7,9-pentaazanonane"

J.L. Flippen-Anderson, D.S. Dudis
Acta Crystallographica, C45, 1107-1109

"Structure of 3-Benzamido-6,8-dibenzoyl-1,3,5,6,8-pentaazabicyclo(3.2.2.)nonane"

C.F. George
Acta Crystallographica, C45, 1241-1243

"Structure of Simple Trichothecene 7alpha-Hydroxyscirpene"

C.F. George, J.L. Flippen-Anderson, R.D. Gilardi

Acta Crystallographica, C45, 1663-1665

"Structure of 2,4,6-Trinitro-9-oxo-2,4,6,8-tetraaza-1-decanyl Acetate"

J.L. Flippen-Anderson, R.D. Gilardi, C.F. George

Acta Crystallographica, C45, 1121-1122

"Structure of 3-Methoxy-2,4-dinitro 2,4-diazapentane"

R.D. Gilardi, C.F. George
Acta Crystallographica, C45, 1243-1244

"Direct Methods in Protein Crystallography"

J.M. Karle
Acta Crystallographica, A45, 303-307

"Linear Algebraic Analysis of Structures with One Predominant Type of Anomalous Scatterer"

J.M. Karle
Acta Crystallographica, A45, 765-781

"Structure of the Antimalarial Halofantrine Hydrochloride"

J.L. Flippen-Anderson, C.F. George, R.D. Gilardi

Acta Crystallographica, C45, 292-294

"Three Conformers in a Crystal of N-Ac-L-Leu-L-Tyr-OMe"

I.L. Karle, J.L. Flippen-Anderson

Acta Crystallographica, **C45**, 791-795

"Crystal and Molecular Structure of the Antimalarial Agent Empiroline"

J.M. Karle, I.L. Karle

Antimicrobial Agents and Chemotherapy, **33**, 1081-1089

"Modular Design of Synthetic Protein Mimics. Characterization of the Helical Conformation of a 13-residue Peptide in Crystals"

I.L. Karle, J.L. Flippen-Anderson, K.

Uma, P. Balaram

Biochemistry, **28**, 6696-6701

"Conformational Characteristics of Peptides and Unanticipated Results from Crystal Structure Analyses"

I.L. Karle

Biopolymers, **28**, 1-14

"Solvated Helical Backbones: X-ray Diffraction Study of Boc-Ala-Leu-Aib-Ala-Leu-Aib-OMe•H₂O"

I.L. Karle, J.L. Flippen-Anderson, K.

Uma, P. Balaram

Biopolymers, **28**, 773-781

"Conformational Stability of Antamanide and Analog. Crystal Structure of Perhydrosymmetric antamanide, cyclic(-Val-Pro-Pro-Cha-Cha-Val-Pro-Pro-Cha-Cha)"

I.L. Karle, J.L. Flippen-Anderson, T. Wieland

International Journal of Peptide and Protein Research, **33**, 422-427

"Cystine Peptides: Antiparallel beta-sheet Conformation of the Cyclic Biscystine Peptide (Boc-Cys-Ala-Cys-NHCH₃)₂"

I.L. Karle, J.L. Flippen-Anderson, R. Kishore, P. Balaram

International Journal of Peptide and Protein Research, **34**, 37-41

"Macromolecular Structure from Anomalous Dispersion"

J.M. Karle

Physics Today, **42**, 22-29

"Alpha-helix and Mixed 3l0/alpha-helix in Co-crystallized Conformers of Boc-Aib-Val-Aib-Aib-Val-Val-Aib-Bal-Aib-OMe"

I.L. Karle, J.L. Flippen-Anderson, K.

Uma, H. Balaram, P. Balaram

Proceedings of the National Academy of Sciences, **86**, pp. 765-769

"Insertion of a Water Molecular into an alpha-helix Backbone and Other Modes of Hydration: X-ray Structure Analysis"

I.L. Karle, P. Balaram

in *Synthetic Peptides: Approaches to Biological Problems*, I.Tam and T.Kaiser, eds., (Alan R. Liss, Inc), **86**, pp. 71-85

"Probes for Narcotic Receptor Mediated Phenomena. 15.1 (3S,4S)-(+)-trans-3-Methylfentanyl Isothiocyanate, a Potent Site-Directed Acylating Agent for the delta Opioid Receptors *in vitro*"

C.H. Kim, R.B. Rothman, A.E. Jacobson,

M.V. Mattson, V. Bykov, R.A. Streaty,

W.A. Klee, C.F. George, J.B. Long, K.C.

Rice

Journal of Medicinal Chemistry, **32**,

1392-1398

"Determination of Atomic Positions Using Electron Nanodiffraction Patterns from Overlapping Regions: Si[110]"

J.H. Konnert, P. D'Antonio, J.M. Cowley,

A. Higgs, H-J. Ou

Ultramicroscopy, **30**, 371-384

"Electronic and Structural Features of gamma-Aminobutyric Acid (Gaba) and Four of its Direct Agonists"

K.B. Lipkowitz, R.D. Gilardi, M.H.

Aprison

Journal of Molecular Structure, **195**, 65-77

"*Ab initio* Investigations of Symmetric Rotor Models for Small Trifluoromethyl Substituted Molecules"

A.H. Lowrey

Journal of Molecular Structure, **187**, 177-190

"Investigation of Large-Amplitude Motion"

A.H. Lowrey

in *Stereo-chemical Applications of Gas-Phase Electron Diffraction*, I. Hargitta and M. Hargitta, eds., (VCH Publishers, Inc.), pp. 367-411

"Synthesis of 4,4,8,8,11,11-Hexanitropentacycle [5.4.0.0.(2,6).0(3,10).0(5,9)]-Undecane"

A.P. Marchand, P.F. Dave, B.E. Arney, J.L. Flippen-Anderson, R.D. Gilardi, C.F. George

Journal of Organic Chemistry, **54**, 1769-1771

"(Cyclopentadienyl)ruthenium Complexes of 3-Methoxyestrone: A High-Field NMR and X-ray Crystallographic Study"

R.M. Moriarty, Y-Y. Ku, A.S. Gill, R.D. Gilardi, R.E. Perrier, M.J. McGlinchey
Organometallics, **8**, 960-967

"Neopentylarsenic Chemistry: Synthesis and Characterization of

$\text{As}(\text{CH}_2\text{CMe}_3)_n\text{Br}_{(3-n)}$ ($n=1-3$) and $\text{As}(\text{CH}_2\text{CMe}_3)_n\text{Br}_{(5-n)}$ ($n=2$ or 3). Crystal and Molecular Structure of $\text{As}(\text{CH}_2\text{CMe}_3)_3$ and $\text{As}(\text{CH}_2\text{CMe}_3)_3\text{Br}_2$ "

J.C. Pazik, C.F. George

Organometallics, **8**, 482

"Pressure Effect on the Product Distribution in Competing Reactions: Formation of a Bis Diels-Alder Adduct via an Aromatizable Intermediate"

S. Srivastava, A.P. Marchant, V. Vidyasagar, J.L. Flippen-Anderson, R.D. Gilardi, C.F. George, Z. Zachwieja, W.J. leNoble

Journal of Organic Chemistry, **54**, 247-249

"New Furo(3,2-b)Furans Derived from L-Ascorbic Acid"

K. Sussangkarn, G. Fodor, D. Strobe, C.F. George

Heterocycles, **28**, 467

"Geneserine and Geneseroline Revisited: Acid-Base Catalyzed Equilibria of Hexahydropyrrolo(2,3-b)-Indole N-Oxides with Hexahydro-1,2-Oxazino-(5,6-5)-Indoles"

Q.S. Yu, H.C.J. Yeh, A. Brossi, J.L. Flippen-Anderson

Journal of Natural Products, **52**, 332-336

BIOMOLECULAR SCIENCE AND ENGINEERING

"Use of Thiol-Terminal Silanes and Heterobifunctional Crosslinkers for Immobilization of Antibodies on Silica Surfaces"

S.K. Bhatia, L.C. Shriver-Lake, K.J. Prior, J.H. Georger, J.M. Calvert, R. Bredehorst, F.H. Ligler

Analytical Biochemistry, **178**, 408-413

"Fiber Optic Based Immunosensors: A Progress Report"

S.K. Bhatia, R.B. Thompson, L.C. Shriver-Lake, M. Levine, F.H. Ligler

Proceedings of the SPIE, **1054**, pp. 184-190

"Poly(Acetylene) as a Positive Electrode in Lithium/Sulfur Oxyhalide Cells"

J.M. Calvert, B.R. Weiner, J.A. Smith, R.J. Nowak

Journal of the Electrochemical Society, **136**, 593

"Calorimetric Study of the Incommensurate Smectic A Phase in DB7Ocn + 80CB Mixtures"

P. Das, K. Ema, C.W. Garland, R.N. Shashidhar

Liquid Crystals, **4**, 58581

"Calorimetric Study of Smectic Polymorphism in DB8ONO2 Mixtures"

K. Ema, G. Nounesis, C.W. Garland, R.N. Shashidhar

Physical Review A, **39**, 2599

"An Electrical Characterization of DPPE/Valinamycin Films on Platinum Surfaces in Aqueous Solutions"

T.L. Fare, E.L. Chang

Proceedings of the Annual International Conference of the IEEE/EMBS, **11(4)**, p. 1377

"Liposome Encapsulated Hemoglobin: A Synthetic Red Cell"

M.C. Farmer, S.A. Johnson, R.L. Beissinger, J.L. Gossage, A.B. Lynn, K.A. Carter

in Biotechnological Applications of Lipid Microstructures, B.P. Gaber, J.M. Schnur, D. Chapman, eds., (Plenum Pub.), pp. 161-170

**"Liposome Encapsulated Hemoglobin:
Oxygen Binding Properties"**

M.C. Farmer, A.S. Rudolph, K.D.
Vandegriff, M.D. Hayre, S.A. Bayne, S.A.
Johnson
in *Blood Substitutes*, Chang and R.P.
Geyer, eds., (Marcel Dekker, Inc., New
York), pp. 289-299

**"Liposome-Based Immunoassays for
Detection of Small and Large Molecules"**

B.P. Gaber, R. Bredehorst, F.H. Ligler
in *Biotechnological Applications of Lipid
Microstructures*, B.P. Gaber, J.M. Schnur,
and D. Chapman, eds., (Plenum Pub.),
pp. 209-214

**"Molecular Modeling of the Phospholipid
Bilayer"**

B.P. Gaber, I. Chandrasekhar, M.
Nagumo, N. Pattabiraman
in *Biotechnological Applications of Lipid
Microstructures*, B.P. Gaber, J.M. Schnur,
D. Chapman, eds., (Plenum Pub.), pp. 1-11

**"A Smectic A Smectic C* Tricritical Point
in a Mixture of Two Compounds Exhibiting
Large Spontaneous Polarization"**

G. Heppke, D. Loeztsch, R.N. Shashidhar
Liquid Crystals, 5(2), 489

**"Dielectric Studies of Two Isomeric Cyano
Ester Homologous Series"**

G. Heppke, S. Pfeiffer, C. Nagabhushan,
R.N. Shashidhar
Molecular Crystals and Liquid Crystals,
170, 89

**"A Vacuum Field Emission Cathode
Derived From Composite Microstructures"**

D.A. Kirkpatrick, R.R. Price, J.M. Schnur
Proceedings of the IEEE Electron Devices
Meeting, Washington Hilton, Washington
DC, December

"Calorimetric Study of

**Nonyloxybenzoyloxy-cyanoazobenzate
(90BCAB)"**

P. Leach, P. Das, C.W. Garland, R.N.
Shashidhar
Molecular Crystals and Liquid Crystals,
168, 183

**"Liposome Encapsulated Hemoglobin:
Stabilization, Encapsulation, & Storage"**

F.H. Ligler, L.P. Stratton, A.S. Rudolph
The Red Cell: 7th Ann Arbor Conference,
pp. 435-455

**"Purification of Glycerol Dialkyl Nonitol
Tetracether From Sulfolobus
Acidocaldarius"**

S.L. Lo, C.E. Montague, E.L. Chang
Journal of Lipid Research, 30, 944-949

**"Automated Sequences/Structure Search on
Protein Structures in the Brookhaven
Protein Data Bank"**

K. Namboodiri, N. Pattabiraman, A.H.
Lowery, B.P. Gaber
Biophysical Journal, 55, 443a

**"Microwave Surface Resistance of Bulk
TlBaCaCuO Superconductors"**

H.S. Newman, A.K. Singh, K.
Sadananda, M.A. Iman
Applied Physics Letters, 54, 389-390

**"Pressure Studies on Phase Transitions in
4alkoxyphenyl 4'nitrobenzoyloxybenzoates"**

V.N. Raja, R.N. Shashidhar, B.R. Ratna,
G. Heppke, C. Bahr, J.F. Marko, J.O.
Indekeu, A.N. Berker
Physical Review A, 39(8), 4341-3344

**"Technological Development of Lipid
Based Tubule Microstructures"**

A.S. Rudolph, J.M. Calvert, P.E. Schoen,
J.M. Schnur
in *Biotechnological Applications of Lipid
Microstructures*, B.P. Gaber, J.M. Schnur,
and D. Chapman, eds., (Plenum Pub.),
pp. 305-320

**"Characterization on Hemodynamic,
Hematologic and Biochemical Responses
to Administration of Liposome
Encapsulated Hemoglobin in the Conscious
Freely Moving Rat"**

A.S. Rudolph, R. Rabinovici, G.
Feuerstein
Journal of Circulatory Shock, 28, 115-132

**"The Interaction of Proline Aggregates
With Membrane Phospholipids in Excess
Water"**

A.S. Rudolph, B.A. Goins
Journal of Cryobiology, 26, 160

"Preservation of the Blood Substitute
Liposome Encapsulated Hemoglobin by
Freeze-Drying"

A.S. Rudolph, R.O. Cliff

Journal of Cryobiology, **26**, 161

"Water Free Self-Assembly of
Phospholipid Tubules"

A.S. Rudolph, J.M. Calvert, M.E. Ayers,
J.M. Schnur

Journal of the American Chemical Society,
October, 8516-8517

"Stability and Shelf-Life of Liposome
Encapsulated Hemoglobin: A Potential
Blood Substitute"

A.S. Rudolph, L.P. Stratton, W.K. Knoll,
S.A. Bayne, F.H. Ligler

Materials Research Society Symposium
Proceedings, **110**, pp. 153-158

"Spectroscopic Studies of Tubule-Forming
Polymerizable Lecithins"

A.S. Rudolph, P.E. Schoen, M. Nagumo, F.
Behroozi, T.G. Burke, M.E. Ayers, A.K.
Singh, R. Treanor

Proceedings of the SPIE, **1057**, pp. 57-63

"Phase Transitions and Critical
Phenomena in Strongly Polar Smectic A
Liquid Crystals"

R.N. Shashidhar, B.R. Ratna

Liquid Crystals, **5**(2), 421-342

"Symmetrical and Unsymmetrical
Coupling of Alkyl Halides Mediated by
Grignard Reaction"

A.K. Singh, B. Herendeen, S.K. Bhatia,
F.H. Ligler

Synthetic Communications, **19**(16),
2899-2907

"Standardization of Fluorophors Using
Phase Fluorometry"

R.B. Thompson, E. Gratton

in *Fluorescent Biomolecules:*

Methodologies and Applications, D.M.

Jameson and G.D. Reinhart, eds.,
pp. 375-377

"Waveguide Parameter for Waveguide-
Binding Fiber Optic Sensors"

R.B. Thompson, L.M. Kondracki

Proceedings IEEE in Medicine & Biology
Soc. 11th Annual International
Conference, pp. 1102-1103

"Electric Field Manipulation of
Phospholipid Tubules: Optical
Birefringence Measurements"

D.M. Woods, Z. Li, C. Rosenblatt, F.
Yager, P.E. Schoen

Molecular Crystals and Liquid Crystals,
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"Development of Membrane-Based
Biosensor: Measurement of Current From
Photocycling Bacteriorhodopsin on Patch
Clamp Electrodes"

in *Biotechnological Applications of Lipid
Microstructures*, B.P. Gaber, J.M. Schnur,
D. Chapman, eds., (Plenum Pub.),
pp. 257-267

CHEMISTRY

"Synthetic Sequence Effect on Cross-
Linked Polymer Mixtures"

R.B. Fox, D.J. Moonay, J.P. Armistead,
C.M. Roland

Multiphase Polymers: Blends and

Ionomers, L.A. Utracki and R.A. Weiss,
eds., ACS Symp. Series, **395**, p. 245

"Magnetic Field Sensing with
Magnetostrictive Materials using a
Tunneling Tip Detector"

J.H. Wandass, J.S. Murday, R.J. Colton
Materials Research Society Symposium
Proceedings

"Magnetic Field Sensing with
Magnetostrictive Materials Using a
Tunneling Tip Detector"

J.H. Wandass, J.S. Murday, R.J. Colton
Sensors and Actuators, **19**, 211

CHEMICAL DYNAMICS AND DIAGNOSTICS

"Alkali Metal-Oxides: II. Unoccupied and Excited States"

E. Bertel, N. Memmel, W. Jacob, V. Dose, F.P. Netzer, K.F. Wall, C.D. Parker, K.A. McIntosh, N.N. Efremow, J.J. Zayhowski, D.J. Ehrlich

Applied Physics Letters, **55**, 2295

"Gas-Surface Reactions: Molecular Dynamics Simulations of Real Systems"

D.W. Brenner, B.J. Garrison

Advances in Chemical Physics, **76**, 281

"Chemical Model for Intrinsic Detonation of Velocities"

D.W. Brenner, C.T. White, M.L. Elert, F.E. Walker

International Journal of Quantum Chemistry, **S23**, 33

"Relationship Between the Embedded Atom Method and Tersoff Potentials"

D.W. Brenner

Physical Review Letters, **63**, 1022

"Simulations of Reactive Collisions in Molecular Solids: Application to Detonations"

D.W. Brenner, C.T. White, M.L. Elert (The Chemical Propulsion Information Agency)

"Tersoff-Type Potentials for Carbon, Hydrogen and Oxygen"

D.W. Brenner

Materials Research Society Symposium Proceedings, **141**, p. 59

"High-Pressure Fast-Atom Bombardment Mass Spectrometry: Collision Stabilization and Reactions of Alkali Halide"

J.H. Callahan, R.J. Colton, M.M. Ross

International Journal of Mass Spectrometry and Ion Processes, **90**, 9

"Cluster Ion Formation By Direct Laser Vaporization and Particle Bombardment"

J.H. Callahan, M.M. Ross, A.P. Baronavski

Baronavski

Proceedings of the 37th ASMS Conference on Mass Spectrometry and Allied Topics, Miami Beach FL, May, p. 157

"Dissociation and Reactivity of Cobalt and Molybdenum Oxide Cluster Ions"

C.J. Cassady, S.W. McElvany

Proceedings of the 37th ASMS Conference on Mass Spectrometry and Allied Topics, Miami Beach FL, May, p. 161

"Tantalum Carbide Cluster Ions:

Production, Dissociation and Reactivity"

C.J. Cassady, S.W. McElvany

Proceedings of the 37th ASMS Conference on Mass Spectrometry and Allied Topics, Miami Beach FL, May, p. 169

"Hyperfine Interactions in Dangling Bond Defects"

M.R. Cook, C.T. White

Materials Research Society Symposium Proceedings, **141**, p. 85

"Molecular Electronic Structure Theory in the Study of Localized Defects"

M.R. Cook, C.T. White

Semiconductor Science and Technology, **4**, 1012

"Spectra, Radiative Lifetimes and Band Oscillator Strengths of the $Al - X1^+$ Transition of BH"

C.H. Douglass, H.H. Nelson, J.K. Rice

Journal of Chemical Physics, **90**, 6940

"Collision-Induced Electronic Quenching of BH (Al)"

C.H. Douglass, J.K. Rice

Journal of Physical Chemistry, **93**, 7659

"On the Gaussian-Type Orbitals Approach to Local Density Functional Theory"

B.I. Dunlap, N. Rosch

Journal of Chemical Physics, **86**, 671

"New Chemicals from Cluster Science"

B.I. Dunlap, A.P. Baronavski, M.M. Ross, S.W. McElvany

NRL Review, July

"One Dimensional Molecular Dynamics Simulation of the Detonation of Nitric Oxide"

M.L. Elert, D.M. Deaven, D.W. Brenner, C.T. White

Physical Review B, **39**, 1455

"A Triple Stage Quadrupole Glow Discharge Mass Spectrometer: The Dissociative Removal of Polyatomic Interferences"

W.W. Harrison, F.L. King
Proceedings of the 37th ASMS Conference on Mass Spectrometry and Allied Topics, Miami Beach FL, May, p. 70

"Fluorination of Diamond (111) Single Crystal Surfaces by XeF_2 "

D.S.Y. Hsu, N.H. Turner
1st ONR Diamond Technology Initiative Symposium, Arlington VA, July

"Laser Probing of Desorbed Product Species Formed in Gas-Surface Chemical Reactions"

D.S.Y. Hsu
Proceedings of the SPIE Photochemistry in Thin Films, 1056, Los Angeles, January, pp. 9-29

"Abundance Distributions and Dissociations of Sputtered Aluminum, Gallium, and Indium Cluster Ions"

F.L. King, M.M. Ross
Chemical Physics Letters, 164, 131

"Advanced Hazardous Gas Detection System: Conceptual Design"

M.E. Koslin, R. Heppner, J.R. Wyatt, W.R. Helms, J.D. Collins
CPIA Publication, 508, 135

"An Inverse Problem in Propellant Combustion"

H.D. Ladouceur
Proceedings of the R.C.P. 264 Conference, Springer-Verlag, April

"Formation of Metal Carbide Cluster Ions by Direct Laser Vaporization"

S.W. McElvany, C.J. Cassidy
FT/ICR Newsletter of Ohio State University, p. 14

"FTMS Studies of Carbon Cluster Anions"

S.W. McElvany
Proceedings of the 37th ASMS Conference on Mass Spectrometry and Allied Topics, Miami Beach FL, May, p. 159

"Chemical Forces Associated with Deuterium Confinement in Palladium"

J.W. Mintmire, B.I. Dunlap, D.W. Brenner, R.C. Mowrey, H.D. Ladouceur, K.I. Pandya
Journal of Physical Chemistry, 93, 6308

"First-Principles Geometry Optimization of Polysilane"

J.W. Mintmire
Materials Research Society Symposium Proceedings, 141, p. 235

"Conformational Effects in Organopolysilanes: A First-Principles Approach"

J.W. Mintmire
Physical Review B, 34, 1335

"Comment on 'Ground State of Trans-Polyacetylene and the Peierls Mechanism'"

J.W. Mintmire, C.T. White
Physical Review Letters, 63, 2532

"Band Structure and Optical Absorption Properties of Polysilane Chains"

J.W. Mintmire, J.V. Ortiz
Proceedings of the American Chemical Society Workshop on Advances in Silicon-Based Polymer Science

"A Numerically Exact Full Wave Packet Approach to Molecule-Surface Scattering"

R.C. Mowrey, Y. Sun, D.J. Kouri
Journal of Chemical Physics, 91, 6519

"Photodissociation Studies of Borane Carbonyl"

H.H. Nelson
Proceedings of the 4th International Laser Science Conference, Atlanta GA, October, 1991, p. 637

"On the Splitting of the CO 1 Level in the Chemisorption System CO/Ni(111): Substrate or Lateral Interaction"

N. Nosch, P. Sandl, P. Knappe, A. Grling, B.I. Dunlap
Zeitschrift fuer Physik D, 12, 547

"Ground States and Ionization Energies of Polysilane Oligomers"

J.V. Ortiz, J.W. Mintmire
Proceedings of the American Chemical Society Workshop on Advances in Silicon-Based Polymer Science

"Reactions of C_nN^+ with Methane and the Implications for Interstellar Chemistry"

D.C. Parent

Astrophysical Journal, **347**, 1183

"Investigations of Small Carbon Cluster Ion Structures by Reactions with HCN"

D.C. Parent, S.W. McElvany

Journal of the American Chemical Society, **111**, 2393

"Reactions of Small Carbon Cluster Ions with HCN: A Structural Probe"

D.C. Parent, S.W. McElvany

Zeitschrift Fuer Physik D, **12**, 567

"Rotational Distributions of CO from the 193nm Photodissociation of BH_3CO Using Non-Resonant Four Wave Mixing for VUV Generation"

L. Pasternack, B.R. Weiner, A.P.

Baronavski

Chemical Physics Letters, **154**, 121

"Neopentylarsenic Chemistry: Synthesis and Characterization of

$As(CH_2CMe_3)_nBr_{(3-n)}$ ($n=1$ to 3) and

$As(CH_2CMe_3)_nBr_{(5-n)}$ ($n=2$ or 3). Crystal

and Molecular Structure of $As(CH_2CMe_3)_3$ and $As(CH_2CMe_3)_3Br_2$ "

J.C. Pazik, C.F. George

Organometallics, **8**(2), 482

"The Gas-Phase Reaction Kinetics of BH"

J.K. Rice, N.J. Caldwell, H.H. Nelson

Journal of Physical Chemistry, **93**, 3600

"The LCGTO-X Method for Transition Metal Model Clusters: Recent Developments and Applications"

N. Rosch, P. Knappe, P. Sandl, A. Grling, B.I. Dunlap

The Challenge of d and f Electrons, D.R.

Salahub and M.C. Zerner, eds., ACS Symp. Series, p. 394

"Hydrazine Detection Using Chemiresistors"

S.L. Rose-Pehrsson, J.W. Grate, M.A.

Klusky

CPIA Publication, **508**, 157

"The Study of Whetlerite Surfaces by X-ray Photoelectron Spectroscopy"

M.M. Ross, R.J. Colton, V.R. Deitz

Carbon, **27**, 492

"Mass Spectrometric Analysis of Anatoxin-a"

M.M. Ross, D.A. Kidwell, J.H. Callahan

Journal of Analytical Toxicology, **13**, 317

"Stability and Reactivity of Bismuth Cluster Ions"

M.M. Ross, V.H. Wysocki, S.W.

McElvany

Proceedings of the 37th ASMS Conference on Mass Spectrometry and Allied Topics, Miami Beach FL, May, p. 163

"Off Resonant Third-Order Optical Nonlinearities of Metal-Substituted Phthalocyanines"

J.S. Shirk, J.R. Lindle, F.J. Bartoli, C.A.

Hoffman, Z.H. Kafafi, P.P. Schmidt, C.T.

White

Physics Letters A, **138**, 51

"NMR Analyses of Chemisorbed Ligands for Isomeric Products: The

p-Sulfonylbenzyl Group in Silica Gel"

D. Slotfeldt-Ellingson, H.A. Resing, K.

Unger, J. Frye

Langmuir, **5**, 1324

"Anisotropic Spread of Surface Dimer Openings in the Initial Stages of the Epitaxial Growth of Si on Si(100)"

D. Srivastava, B.J. Garrison, D.W.

Brenner

Physical Review Letters, **63**, 302

"A Real Time Passive Dosimeter for HCl Vapor"

P.A. Taffe, J.R. Wyatt

CPIA Publication, **508**, 141

"Evaluation of a Passive HCl Indicating System"

P.A. Taffe, J.R. Wyatt

CPIA Publication, **513**, 141

"Photochemistry of Adsorbed Trimethylindium at 220nm"

E. Villa-Aleman, J.S. Horowitz, D.S.Y.

Hsu

Chemical Physics Letters, **164**, 587

"UV Photodissociation Dynamics of H_2S and D_2S "

B.R. Weiner, H.B. Levene, J.J. Valentini,

A.P. Baronavski

Journal of Chemical Physics, **90**, 1403

"Simulations of Detonating Chains"
C.T. White, M.L. Elert, D.W. Brenner
(The Chemical Propulsion Information
Agency)

"Atmosphere Analysis on Board Nuclear
Submarines"
J.R. Wyatt, M.E. Koslin
Proceedings of the 37th ASMS Conference
on Mass Spectrometry and Allied Topics,
Miami Beach FL, May, p. 80

"Kinetics of Methylidyne Radical
Reactions with Ammonia and
Methylamines"
S. Zabarnick, J.W. Fleming, M.C. Lin
Chemical Physics, **132**, 407

"Kinetics of CH Radical Reactions with
N₂O, SO₂, CO₂, and SF₆"
S. Zabarnick, J.W. Fleming, M.C. Lin
*International Journal of Chemical
Kinetics*, **21**, 765

POLYMERIC MATERIALS

"Sonar Rubber Dome Reliability. III.
Failure Analysis of the AN/SQS-56 Sonar
Rubber Dome (S/NA13) from USS Lewis B.
Puller, FFG23"
C.D. Beachem, H.L. Schrader, C.F.
Poranski Jr.
NRL Memorandum Report 6451

"Acousto-Optic and Linear Electro-Optic
Properties of Organic Polymeric
Materials"
M.E. Boyle, R.F. Cozzens
NRL Memorandum Report 6454

"Eye/Sensor Protection Against Laser
Irradiation"
M.E. Boyle, R.F. Cozzens
NRL Memorandum Report 6482

"Flow-Induced Complexation of
Poly(acrylic acid) and Its Derivatives in
Dilute Solution"
L-S. Choi, T.H. Yoon, J.P. Armistead, K.J.
McGrath, O-K. Kim
Polymer Preprints, **2**, 382

"A Rapid Algorithm for Simulating
Motionally Averaged Powder Patterns"
D.G. Cory, W.M. Ritchey
Journal of Magnetic Resonance, **81**, 383

"New Approaches to NMR Imaging in a
Rotating Field Gradient"
D.G. Cory
Journal of Magnetic Resonance, **82**, 337

"Magnetic Field Gradient Imperfections in
NMR Imaging of Rotating Solids"
D.G. Cory, W.S. Veeman
Journal of Magnetic Resonance, **82**, 374

"Applications of Line Narrowing to ¹H
NMR Imaging of Solids"
D.G. Cory, W.S. Veeman
Journal of Magnetic Resonance, **84**, 392

"Chemical Shift Resolved Back Projection
Imaging"
D.G. Cory, J.B. Miller, A.N. Garroway
Journal of Magnetic Resonance, **85**, 219

"¹³C NMR Imaging of Solids With Magic
Angle Sample Spinning"
D.G. Cory, W.S. Veeman
*Journal of Physics E: Scientific
Instruments*, **22**, 180

"Inversion Recovery Cross-Polarization
NMR in Solid Semicrystalline Polymers"
D.G. Cory, W.M. Ritchey
Macromolecules, **22**, 1611

"Magic Angle Spinning ¹H NMR Imaging
of Polybutadiene-Polystyrene Blends"
D.G. Cory, J.C. deBoer, W.S. Veeman
Macromolecules, **22**, 1618

"Sonar Dome Rubber Window Reliability
Assessment XII. Microdielectric Cure
Monitoring of Epoxy Resin Adhesives"
F.K. Francis, B.S. Holmes
NRL Memorandum Report 6477

"Mechanisms of Molecular Beam
Epitaxial Growth on Reconstructed Si (100):
Thermal and Energized Beams"
B.J. Garrison, M.T. Miller, D.W.
Brenner
Materials Research Society Symposium
Proceedings, **141**, p. 419

- "Demonstration of Indirect Detection of ^{14}N Overtone NMR Transitions"
A.N. Garroway, J.B. Miller
Journal of Magnetic Resonance, **82**, 591
- "Phthalonitrile Conductive Polymer Chemical Vapor Sensors"
J.F. Giuliani, T.M. Keller
Journal of Sensors and Materials, **1**, 247
- "Ready for the Market: An Intriguing Class of Coatings"
J.R. Griffith, R.F. Brady Jr.
CHEMTECH, **19**, 370
- "Low Temperature Magnetic Susceptibility Studies of a Phthalonitrile Based Conductive Polymer"
T.M. Keller, J.F. Giuliani, M.D. Pace
Bulletin of Magnetic Resonance, **11**(3-4)
- "A Novel Molecular Association of Poly(acrylic acid) in Dilute Solution Under High Shear Flow"
O-K. Kim, L-S. Choi
Europhysics Conference, **13F**, p. 39
- "Electrical Conductivity of Polymeric Transition Metal Complexes Derived from 2,5-Diamino-1,4-benzenedithiol"
O-K. Kim, T.H. Yoon, D. McDermott
Journal of the Chemical Society - Chemical Communications, 740
- "Synthesis and Characterization of 2,3-Dialkyl-1,4-Butanediols and Copolyesters Containing These Moieties"
A.E. Mera, B. Gordon III
Polymer Bulletin, **22**, 379
- "A Delocalized Carbanion Monomer Preparation: 4,5-Dimethylene-1,8, Octanediol for use as both Functional Condensation and Diene Monomers"
A.E. Mera, B. Gordon III
Polymer Bulletin, **22**, 387
- "Pulsed Field Gradient NMR Imaging of Solids"
J.B. Miller, D.G. Cory, A.N. Garroway
Chemical Physics Letters, **164**, 1
- " ^1H -Refocused Gradient Imaging of Solids"
J.B. Miller, A.N. Garroway
Journal of Magnetic Resonance, **82**, 529
- " ^{13}C Refocused Gradient Imaging of Solids"
J.B. Miller, A.N. Garroway
Journal of Magnetic Resonance, **85**, 255
- "Carbon-13 Refocused Gradient Imaging of Solids"
J.B. Miller, A.N. Garroway
Journal of Magnetic Resonance, **85**, 255
- "Dipolar Decoupled Inversion Pulses for NMR Imaging of Solids"
J.B. Miller, A.N. Garroway
Journal of Magnetic Resonance, **85**, 432
- "Multinuclear NMR Imaging of Solids"
J.B. Miller, A.N. Garroway
in *Quantitative Nondestructive Evaluation*, D.O. Thompson and D.E. Chimenti, eds., (Plenum Pub.), pp. 567-574
- "Molecular Packing and Iodine Doping of Oxovanadium- and Copper- Substituted Tetrakis(cumyl-phenoxy)phthalocyanine Langmuir-Blodgett Films Studied by ESR"
M.D. Pace, W.R. Barger, A.W. Snow
Langmuir, **5**, 973
- "FILMCAL -An ESR Simulation Program for Transition Metals in Phthalocyanine Films"
M.D. Pace, S.M. Masumura
NRL Memorandum Report 6417
- "Glass Transition Temperatures of Polymers"
P. Peyser
in *Polymer Handbook, Vol. 1, Polymerization and Depolymerization*, J. Brandrup and E.H. Immergut, eds.
- "Chemical Vapor Deposition Experiments Using New Fluorinated Acetylacetonates of Calcium, Strontium, and Barium"
A.P. Purdy, A.D. Berry, R.T. Holm, M. Fatemi, D.K. Gaskill
Inorganic Chemistry, **28**, 2799
- "The Mullins Effect in Cross-linked Rubber"
C.M. Roland
Journal of Rheology, **33**, 659
- "A Nearly Ideal Mixture of High Polymers"
C.M. Roland, C.A. Trask
Macromolecules, **22**, 256

"Damping in Polydienes"
C.M. Roland, C.A. Trask
Polymeric Materials, Science and Engineering, **60**, 832

"Rubber Mixtures"
C.M. Roland
Rubber Chemistry and Technology, **62**, 456

"Anomalous Fatigue Behavior in Polyisoprene"
C.M. Roland, J.W. Sobieski
Rubber Chemistry and Technology, **62**, 683

"Network Recovery From Uniaxial Extension: I. Elastic Equilibrium"
C.M. Roland
Rubber Chemistry and Technology, **62**, 863

"Network Recovery From Uniaxial Extension: II. The Origin of the Mullins Effect"
C.M. Roland
Rubber Chemistry and Technology, **62**, 880

"Miscible Elastomer Mixtures"
C.M. Roland, C.A. Trask
Rubber Chemistry and Technology, **62**, 896

"Persistent IR Spectral Holes in Hydrogen Bonded Polymers"
J.S. Shirk, R.G.S. Pong, A.W. Snow
CLEO/QELS '89, Baltimore MD, April

"Persistent IR Laser Induced Spectral Holes in Hydrogen Bonded Polymers"
J.S. Shirk, R.G.S. Pong, A.W. Snow
Journal of Chemical Physics, **90**, 3380

"Thermal Properties of Bislactone Cured Epoxy Resins"
A.M. Sikes, R.F. Brady Jr.
Polymeric Materials, Science and Engineering, **60**, 614

"Phthalocyanine Films in Chemical Sensors"
A.W. Snow, W.R. Barger
in *Phthalocyanines: Principles and Applications*, C.C. Leznoff and A.E.P. Lever, eds., (VCH Publishers Inc.)

"Synthesis and Evaluation of Hexafluorodimethylcarbinol Functionalized Polymers as SAW Microsensor Coatings"
A.W. Snow, L.G. Sprague, R.L. Soulen, H. Wohltjen
Polymer Preprints, **30**(2), 213

"SAW-Chemresistor Microsensor Coatings of Cupric Complexes with Poly(2-vinylpyridine)"
A.W. Snow, H. Wohltjen, W.R. Barger, J. Lint, J.W. Grate
Proceedings of the CRDEC 1988 Scientific Conference on Chemical Defense Research, U.S. Army, Aberdeen MD, Special Publication

"Copper Coupling Reactions of 1,3-Bis(2-Hydroxyhexafluoro-2-Propyl)-5-Iodobenzene and Its Derivatives"
R.J. Soulen Jr., J.R. Griffith
Journal of Fluorine Chemistry, **44**, 195

"Preparation of 1,3,5-tris(2-hydroxyhexafluoro-2-propyl) Benzene and Some Of Its Derivatives"
R.J. Soulen Jr., J.R. Griffith
Journal of Fluorine Chemistry, **44**, 203

"¹H NMR Imaging of Solids with Magic Angle Spinning"
W.S. Veeman, D.G. Cory
Advances in Magnetic Resonance: The Waugh Symposium, W.S. Warren, ed., **13**, pp. 43-56

SURFACE CHEMISTRY

"Magnetostriiction Measurements and Magnetic Field Sensing with a Tunneling Tip Detector"
R.A. Brizzolara, R.J. Colton
INTERMAG '89 Conference, Washington DC, March

"A Tunneling-Tip Magnetometer"
R.A. Brizzolara, R.J. Colton, M. Wun-Fogle, H.T. Savage
Sensors and Actuators, **20**, 199

"Measuring the Nanomechanical Properties and Surface Forces of Materials Using an Atomic Force Microscope"
N.A. Burnham, R.J. Colton
Journal of Vacuum Science & Technology, A7, 2906

"Electrical, Crystallographic, and Optical Properties of ArF-Laser Modified Diamond Surfaces"
J.E. Butler, M.W. Geis, M. Rothschild, R.R. Kunz, I.D. Aggarwal, A.W. Snow
Applied Physics Letters, 55, 1287

"In situ Diagnostics of Diamond CVD"
J.E. Butler, F.G. Celii, P.E. Pehrsson, H-T. Wang, H.H. Nelson
Materials Research Society Symposium Proceedings, 131, p 259

"In situ Characterization of Thin Film Growth by FTIR IRRAS"
J.E. Butler, K.B. Koller, W.A. Schmidt
Materials Research Society Symposium Proceedings, p. 131

"Vapor Phase Diagnostics in CVD Diamond Deposition"
J.E. Butler, F.G. Celii
Proceedings of the 1st International Symposium on Diamond and Diamond-Like Films, 175th Electrochemical Society Meeting, Los Angeles CA, May

"Studies of Diamond Chemical Vapor Deposition"
J.E. Butler, F.G. Celii, D.B. Oakes, L.M. Hanssen, W.A. Carrington, K.A. Snail
Proceedings of the 6th International Conference on High Temperatures, NIST, Gaithersburg MD

"Hydrogen Atom Detection in the Filament-Assisted Diamond Deposition Environment"
F.G. Celii, J.E. Butler
Applied Physics Letters, 54, 1031

"Diagnostics of the Filament-Assisted Diamond Growth Chemistry"
F.G. Celii, P.E. Pehrsson, J.E. Butler
Proceedings of the 197th American Chemical Society Meeting, 34(2), Dallas TX, April

"Optical Detection in Diamond Chemical Vapor Deposition"
F.G. Celii, P.E. Pehrsson, J.E. Butler
Proceedings of the SPIE Conference on Diamond Optics II, 1146, San Diego CA, August

"Determination of Antioxidants in Lubricating Oils Using Ultramicroelectrodes"
G.T. Cheek, R.L. Mowery
Analytical Chemistry, 61, 1467

"Hydrolysis of C-Cl Bonds at Ambient Temperature on a Carbon-Supported Catalyst (Whetlerite)"
V.R. Deitz
Extended Abstract, 19th Biennial Conference on Carbon, Pennsylvania State University, June, p. 70

"Hydrolysis of the C-Cl Bond in ClCN at the Ambient Temperature on a Carbon-Supported Catalyst (Whetlerite)"
V.R. Deitz, J.A. Rehrmann
Proceedings of the 3rd International Symposium on Protection Against Chemical Warfare Agents, Umea, Sweden, p. 263

"Estimate of the Dust Attrition of Granular Activated Carbons"
V.R. Deitz
Wear, 131, 217

"Control Systems for Scanning Tunneling Microscopes with Tube Scanners"
D.P. DiLella, J.H. Wandass, R.J. Colton, C.R.K. Marrian
Review of Scientific Instruments, 60, 997

"Aryl Amine Antioxidant Determinations in Ester Lubricants"
D.D. Dominguez, R.L. Mowery, G.T. Cheek
NRL Memorandum Report 6446

"Composition of Sputter Deposited MoS₂ Films During Run-in in Vacuum"
P.D. Ehni, I.L. Singer
Materials Research Society Symposium Proceedings, p. 140

- "Mossbauer Spectroscopy"
J.J. Eldridge, W.E. O'Grady
in *Techniques for Characterization of Electrodes and Electrochemical Processes*,
R. Varama and R. Selman, eds., (John Wiley and Sons)
- "Friction Behavior and Debris Formation of Titanium Implanted 52100 Steel"
S. Fayeulle, I.L. Singer
Materials Science and Engineering, **A115**, 285
- "Secondary Ion Yield Matrix Effects in SIMS Depth Profiles of Si/Ge Multilayers"
G. Gillen, J.M. Phelps, R.W. Nelson, P. Williams, S.M. Hues
Surface & Interface Analysis, **14**, 771
- "Diamond Synthesis in Flames"
L.M. Hanssen, W.A. Carrington, D.B. Oakes, J.E. Butler, K.A. Snail
American Chemical Society Meeting, April, Dallas TX
- "Intra- and Intergranular Fracture of Diamond Thin Films"
H.A. Hoff, A.A. Morrish, J.E. Butler, B.B. Rath, W.A. Carrington
Materials Research Society Symposium Proceedings, **162**, November, Boston MA, pp. 279-284
- "Laser and Mass Spectrometric Studies of the Mechanism of Silicon Single Crystal Etching Reactions"
J.S. Horwitz, M.C. Lin
Proceedings of the 6th International Conference on High Temperatures, NIST, Gaithersburg MD, April
- "Determination of Hydrogen in Perfluorinated Polyalkylethers Using Time-of-Flight Secondary Ion Mass Spectrometry, Infrared Spectroscopy, and Nuclear Magnetic Resonance Spectrometry"
S.M. Hues, R.J. Colton, R.L. Mowery, K.J. McGrath, J.R. Wyatt
Applied Surface Science, **35**, 507
- "Structural Studies of Artificial Si/Nb Superlattice Films"
S.M. Hues, S.N. Song, D.X. Li, J.B. Ketterson
Journal of Applied Physics, **66**, 5360
- "A DC Plasma Discharge Cleaning Method to Eliminate Background Signals in Secondary Ion Mass Spectrometry"
S.M. Hues, R.J. Colton, J.R. Wyatt
Journal of Vacuum Science & Technology, **A7**, 3126
- "Effect of High Energy Ion Irradiation on the Elastic Moduli of Ag/Co Superlattices"
S.M. Hues, R. Bhadra, M. Grimsditch, E. Fullerton, I.K. Schuller
Physical Review B, **39**, 12966
- "A Pulsed Alkali-Ion Gun for Time-of-Flight Secondary Ion Mass Spectrometry"
S.M. Hues, R.J. Colton, J.R. Wyatt, J.A. Schultz
Review of Scientific Instruments, **60**, 492
- "Results of a SIMS Round Robin Sponsored by ASTM Committee E-42 on Surface Analysis"
S.M. Hues, R.J. Colton
Surface & Interface Analysis, **14**, 101
- "Hot Corrosion Resistant Sc₂O₃-Stabilized ZrO₂ Coatings"
R.L. Jones
Proceedings of the Tri-Service Corrosion Conference, Atlantic City NJ, October
- "High Temperature Vanadate Corrosion of Yttria-Stabilized Zirconia Coatings on Mild Steel"
R.L. Jones
Surface & Coatings Technology, **37**, 271
- "Superabsorbent Polymers: Media for the Enzymatic Detection of Ethyl Alcohol in Urine"
D.A. Kidwell
Analytical Biochemistry, **182**, 257
- "Options to Distinguish Heroin and Poppy Seed Use"
D.A. Kidwell
NRL Memorandum Report 6512
- "In situ Time Resolved XANES Study of the Nickel Oxide Electrode"
J. McBreen, W.E. O'Grady, G. Tourillon, E. Dartyge, A. Fontaine, H.L. Crespi
Wear, **131**, 251

"Catalytic Oxidation of Perfluoropropene Over a Monolithic Pt/TiO₂ Oxidation Catalyst"

P. Nazario-Gonzalez, D.S.Y. Hsu
Proceedings of the CRDEC Scientific Conference on Chemical Defense Research, November

"Investigations of Excimer Laser Effects on CVD Diamond Growth"

P.E. Pehrsson, H.H. Nelson, F.G. Celii
Materials Research Society Symposium Proceedings, Boston MA, November

"Electrode-Modified Zeolites: Electrode Microstructures Contained in and on a Heterogeneous Catalyst"

D.R. Rolison, E.A. Hayes, W.E. Rudzinski

Journal of Physical Chemistry, **93**, 5524

"OMVPE Growth of p-AlGaAs/GaAs Heterojunctions Using Diethylberyllium"

R.S. Sillmon, S.M. Hues, D.K. Gaskill, N. Bottka, P.E. Thompson

Journal of Electronic Materials, **18**, 501

"Solid Lubricating Films for Extreme Environment"

I.L. Singer

Materials Research Society Symposium Proceedings, **140**, p. 215

"Composition and Sliding Contact Behavior of Oxidized Titanium-Implanted 52100 Steel"

I.L. Singer, R.A. Jeffries

Materials Science and Engineering, **A115**, 279

"Ion-Beam Alloying and Thermochemistry of Ceramics at High Temperatures"

I.L. Singer, J.H. Wandass

Proceedings of the NATO Advanced Study Inst. on Structure-Property Relationships in Surface-Modified Ceramics Series E: Applied Sciences, **170**, p. 199

"Theme and Variations on Tantalum-Carbonate Reactions in Molten Fluorides"

K.H. Stern, D.R. Rolison

Journal of the Electrochemical Society, **136**, 3760

"Field Evaluation of the Passive Hydrazine Dosimeters"

P.A. Taffe, S.L. Rose-Pehrsson

CPIA Publication, **508**, p. 167

"X-ray and Electron Channeling Characterization of CVD and Combustion Deposited Diamond"

R.G. Vardiman, C.L. Vold, K.A. Snail, J.E. Butler, C.S. Pande

1st ONR Diamond Technology Initiative Symposium, July, Crystal City, VA

"X-ray and Electron Channeling Characterization of CVD and Combustion Deposited Diamond"

R.G. Vardiman, C.L. Vold, K.A. Snail, J.E. Butler, C.S. Pande

Materials Letters, **8(11-12)**, 468

"High Temperature Lubrication of Ceramics by Surface Modification"

W. Wei, J. Lankford, I.L. Singer, R. Kossowsky

Surface & Coatings Technology, **37**, 179

FIRE SAFETY AND SURVIVABILITY

"Modeling Pool-like Gas Flames of Propane"

K.C. Adiga, D.E. Ramaker, P.A. Tatem, F.W. Williams

Fire Safety Journal, **14**, 241

"Modeling Thermal Radiation in Open Liquid Pool Fire"

K.C. Adiga, D.E. Ramaker, P.A. Tatem, F.W. Williams

Proceedings of the 2nd International Symposium on Fire Safety Science, p. 241

"The Effect of Ambient Oxygen Concentration on the Flame Behavior of Gaseous and Liquid Pool Fires"

K.C. Adiga, D.E. Ramaker, P.A. Tatem, F.W. Williams

Proceedings of the Eastern Section of the Combustion Institute, October, Albany NY

"Navy Electrical Cable Full-Scale Fire Tests of 1985 at Mobile, Alabama"

J.I. Alexander, D.T. Bogan, H.G. Eaton, J. Greene, J. Paholski, R.S. Sheinson, W.D. Smith, P.A. Tatem, H.T. Wang, F.W. Williams, C.M. Henderson, P.L. Polito, J.P. Stone, W.H. McLain, F.W. Williams, C.M. Henderson, P.L. Polito, J.P. Stone, W.H. McLain
NRL Memorandum Report 6395

"Submarine Hull Insulation Fire Test XV -29 September 1986"

J.I. Alexander, R.A. Brown, H.W. Carhart, H.G. Eaton, J. Greene, B.J. Havlovick, C.R. Kaplan, P.L. Polito, G. Salmon, R.S. Sheinson, W.D. Smith, P.A. Tatem, H.T. Wang, F.W. Williams
NRL Memorandum Report 6490

"Chemical Factors Affecting Insolubles Formation In a Shale Derived Diesel Fuel"

E.J. Beal, G.W. Mushrush, J.V. Cooney, J.M. Watkins Jr.
Fuel Science and Technology International, 7, 15

"Assessing Distillate Fuel Storage Stability by Oxygen Overpressure at Higher Temperatures"

E.J. Beal, D.R. Hardy, J.C. Burnett
Preprints of the Division of Petroleum Chemistry, American Chemical Society, 34, 654

"Preparation of Tetrakis (2,6-dimethyl-phenylisocyanide) Cobalt (II) Perchlorate in Novel Reactions"

C. Becker, J.C. Cooper
Inorganica Chimica Acta, 158, 141

"Design Study for Nitrogen Pressurization Fire Fighting System for the SSN 21 Submarine"

R.C. Beller, H.W. Carhart, P.J. DiNenno, J.L. Scheffey, J.P. Stone, P.A. Tatem, F.W. Williams
NRL Memorandum Report 6430

"Aviation Engine Test Facilities (AETF) Fire Project Study"

R.C. Beller, R.E. Burns, J.T. Leonard
NRL Memorandum Report 6505

"Determination and Use of Isothermal Adsorption Constants of Jet Fuel Lubricity Enhancer Additives"

B.H. Black, D.R. Hardy, M.A. Wechter
Industrial and Engineering Chemistry (I&EC) Product Research and Development, 28, 2

"The Lubricity Properties of Jet Fuel as a Function of Composition: Part 1 -Method Development"

B.H. Black, D.R. Hardy
Preprints of the Division of Fuel Chemistry, American Chemical Society, 34, 2

"The Lubricity Properties of Jet Fuel as a Function of Composition: Part 2 - Application of Analysis Method"

B.H. Black, D.R. Hardy
Preprints of the Division of Fuel Chemistry, American Chemical Society, 34, 2

"Use of Seawater for Fighting Electrical Fires"

E.H. Bolander, J.T. Hughes, T.A. Toomey, H.W. Carhart, J.T. Leonard
NRL Memorandum Report 6475

"Tests of Halon 1301 Test Gas Simulants"

H.W. Carhart, J.T. Leonard, P.J. DiNenno, M.D. Starchville, E.W. Forssell, J.T. Wong
NRL Memorandum Report 6424

"Halon 1301 Test Gas Simulant"

R.L. Darwin, D.M. McCrory, J.T. Leonard, E.W. Forssell
International Conference on CFC and Halon Alternatives, Washington DC, October

"Evaluation of Halon 1301 Test Gas Simulants: Enclosure Leakage"

P.J. DiNenno, E.W. Forssell, M.D. Starchville, H.W. Carhart
Fire Technology, 25, 24

"Electronic Space Fire Protection: Halon 1301 Cabinet Penetration Tests"

P.J. DiNenno, M.D. Starchville, J.T. Leonard
NRL Memorandum Report 6404

"Flame Extinguishing Properties of Dry Chemicals; Extinction Concentrations for Small Diffusion Pan Fires"

C.T. Ewing, F.R. Faith, T.J. Hughes, H.W. Carhart

Fire Technology, 25(2), 134

"Evidence for Flame Extinguishment by Thermal Mechanisms"

C.T. Ewing, F.R. Faith, T.J. Hughes, H.W. Carhart

Fire Technology, 25(3), 195-212

"FP-180 Water Motor AFFF Proportioner First Article Procedure and Evaluation"

C.R. Fulper, R.L. Gipe, C.L. Whitehurst, R.E. Burns, R.J. Ouellette, C.W. Siegmann

NRL Memorandum Report 6507

"Assessing Distillate Fuel Storage Stability By Oxygen Overpressure"

D.R. Hardy, R.N. Hazlett, E.J. Beal, J.C. Burnett

Energy & Fuels, 3, 20

"Cetane Number Predictions of a Trial Index Based on Compositional Analysis"

D.R. Hardy, S.G. Pande

Energy & Fuels, 3, 308

"Vision Enhancement for Fire Fighters"

J.B. Hoover, F.K. Lepple, J.T. Leonard

NRL Formal Report 9171

"Effects of Environmental Weathering on the Properties of an ASC-TEDA Radial Flow Carbon Filter: Metal Impregnants"

L. Isaacson, R.A. Lamontagne, E. Riley, J. Rossin

Proceedings of the U.S. Army CRDEC Conference, November

"Analysis of Weathered Navy Carbons"

R.A. Lamontagne, L. Isaacson, R.A. Matuszko

FOA Report, C40266-4.6, -4.7, June

"Characterization of a Weathered Carbon Displaying Agglomeration Tendencies"

R.A. Lamontagne, R.J. Colton, H.A. Hoff, R.A. Matuszko, L. Isaacson, J. Rossin

Proceedings of the U.S. Army CRDEC Conference, November

"Review of Department of the Navy, Judge Advocate General's Surface Ship Fire Investigation Reports for the Period 1980 through 1986"

J.T. Leonard, J.H. Shanley, J.L. Scheffey, J.B. Ferguson

NRL Memorandum Report 6585

"The Mustard Gas-Paint System Revisited"

R.C. Little

NRL Memorandum Report 6401

"The Naval Medical Command (MEDCOM) Evaluation and Live Agent Test Results of NRL-Recommended Detoxifier and Decon Formulations"

R.C. Little, R.G. Taylor, J.M. Shirley

NRL Memorandum Report 6483

"Single and Binary Adsorption of n-Nonane and Xylene on BPL Carbon"

R.A. Matuszko, D. Friday, L. Isaacson, R.A. Lamontagne

Proceedings of the U.S. Army CRDEC Conference, November

"Methods for Quantifying JFTOT Heater Tube Deposits Produced from Jet Fuels"

R.E. Morris, R.N. Hazlett

Energy & Fuels, 3, 262

"Oxidation of Selected Organosulfur Compounds in Dodecane over a Heated Metal Surface"

R.E. Morris, G.W. Mushrush

Preprints of the Division of Petroleum Chemistry, American Chemical Society, 34, 538

"Characterization of Polar Extracts from Two Petroleum-Derived Fuels"

G.W. Mushrush, J.M. Watkins Jr., E.J. Beal, R.E. Morris, J.V. Cooney, R.N. Hazlett

Fuel Science and Technology International, 7, 931

"GC/MS Characterization of Nitrogen Compounds in Shale Derived Fuels"

G.W. Mushrush, J.V. Cooney, J.M. Watkins Jr., E.J. Beal, D.R. Hardy

LC GC -Magazine of Liquid and Gas Chromatography, 7, 354

"Interactive Chemical Effects and Instability of Shale Derived Middle Distillate Fuels"

G.W. Mushrush, E.J. Beal, J.M. Watkins Jr., R.E. Morris, D.R. Hardy
Proceedings of the 22nd Annual Oil Shale Symposium, Colorado School of Mines, 22, October, p. 172

"GC/MS Analysis of Fuels Derived from Shale Oil"

G.W. Mushrush
Proceedings of the Virginia Academy of Science Meeting, Richmond VA., 40, p. 72

"GC/MS Characterization of Acid Extractable Nitrogen Compounds in a Shale-Derived Fuel"

G.W. Mushrush, J.V. Cooney, J.M. Watkins Jr., E.J. Beal
Rapid Communications in Mass Spectrometry, 3, 41

"Control of Sulfate-Reducing Bacteria in Hydrocarbon Fuel Tanks"

R.A. Neihof, G. Andrykovitch
Biodeterioration Research, 2, 61

"The Yield Stress of Frozen Hydrocarbons Fuels"

R.A. Neihof
Fuel, 68, 843

"High Temperature Lubricants from Biodeuterated Materials Produced by Algae"

R.A. Neihof, M.M. Ross, R.G. Munro, L-S. Hsu, C-S. Ku, G. Rosina, G. Rangelov, G. Astl, N. Rosch, P. Knappe, B.I. Dunlap, H. Saalfeld
Physical Review B, 39, 6087

"Control of Microbial Growth by Alkalinization"

R.A. Neihof
Quadripartite Meeting on Fuels, Lubricants and Allied Products, Ottawa, Canada, May

"Evaluation of Biocides"

R.A. Neihof
Quadripartite Meeting on Fuels, Lubricants and Allied Products, Ottawa, Canada, May

"Yield Stress of Frozen Hydrocarbon Fuels"

R.A. Neihof
Quadripartite Meeting on Fuels, Lubricants and Allied Products, Ottawa, Canada, May

"Stability of Australian Automotive Diesel Fuels"

L.D. Palmer, I.A. Davis, E.J. Beal, D.R. Hardy
Proceedings of the CHEMECA '89, p. 734, August

"A Rigorous and Practical Evaluation of Published Cetane Indices"

S.G. Pande, D.R. Hardy
Preprints of the Division of Petroleum Chemistry, American Chemical Society, 34, p. 659

"The Application of Response Surface Methodology to Laboratory Experiments"

J.M. Shirley, R.C. Little
Proceedings of the Symposium on Data Efficiency Using Pre-Processing, Pro-File Computer Institute, McLean VA, May

"Hydroperoxide Formation and Reactivity in Jet Fuels"

J.M. Watkins Jr., G.W. Mushrush, R.N. Hazlett, E.J. Beal
Energy & Fuels, March/April, 231

"Jet Fuel Instability and Hydroperoxide Interactions"

J.M. Watkins Jr., G.W. Mushrush, E.J. Beal, D.R. Hardy
Preprints of the Division of Fuel Chemistry, American Chemical Society, 34, p. 832

"Full Scale Smoke Curtain Tests - 5-10 October 1986"

F.W. Williams, M.E. Wynn, M. Brown, R. Carey, T.A. Toomey, H. Schultz
NRL Memorandum Report 6447

"Analysis of Quick Response Fire Fighting Equipment on Submarine - Phase I, Scoping Tests"

F.W. Williams, L.A. Jonas, R.J. Ouellette, J.R. Saams, J.L. Scheffey
NRL Memorandum Report 6484

"The Extinguishment of Fires Using Low Flow Water Hose Streams"

F.W. Williams, J.L. Scheffey

Proceedings of the International Fire Protection Engineering Institute, May

"A Shock Tube Study of the Oxidation of the Methyl Radical"

C.H. Wu, T.K. Choudhury, H.T. Wang, M.C. Lin

Proceedings of the 17th International Symposium on Shock Waves and Shock Tubes, American Institute of Physics, Bethlehem PA, July

"Kinetics and Mechanism of the Reaction of HNCO with Nitrogen Oxides"

C.H. Wu

Proceedings of the 26th JANNAF Combustion Meeting, Jet Propulsion Laboratory, Pasadena CA, October

MATERIALS SCIENCE AND TECHNOLOGY

"Period Doubling and Magnetic Chaos in Superconducting $\text{YBa}_2\text{Cu}_3\text{O}_7$ "

T. Datta, C. Almasan, D.U. Gubser, S.A. Wolf, L.E. Toth

Physica C, 153-155, 332-333

"Correlation of Optical Caustics with Fracture Behavior of High-Strength Steels"

R.W. Judy Jr., R.J. Sanford

in *Nonlinear Fracture Mechanics: Vol. 1, Time-Dependent Fracture*, ASTM STP 995, J.D. Landes, A. Saxena, and J.G. Merkle, eds., (ASTM, Philadelphia), pp. 340-357

"Stress Corrosion Cracking of Pure Titanium as Influenced by Oxygen Content"

R.W. Judy Jr., B.B. Rath, I.L. Caplan

Proceedings of the 6th World Conference on Titanium, IV, France, p. 1747

PHYSICAL METALLURGY

"Sonar Rubber Dome Reliability:

III. Failure Analysis of the AN/SQS-56

Sonar Rubber Dome (S/NA13) from

USS Lewis B. Puller, FFG23"

C.D. Beachem, H.L. Schrader, C.F. Poranski Jr.

NRL Memorandum Report 6451

"XD™ Titanium Aluminide Composites"

L. Christodoulou, P.A. Parrish, C.R.

Crowe

Materials Research Society Symposium Proceedings, 120, p. 29

"Laser Beam Welding of Titanium"

P.E. Denney, E.A. Metzbowser

Welding Journal, 8, 342s-346s

"Comment on 'A New Type of Twinning in TiAl-2wt% Mn Intermetallic Compound'"

C.R. Feng, D.J. Michel, C.R. Crowe

Journal of Materials Science Letters, 8, 1238

"Strain-Induced Recrystallization of TiAl"

C.R. Feng, D.J. Michel, C.R. Crowe

Materials Research Society Symposium Proceedings, 133, p. 669

"Transformation of Miller Indices in Twinned Structures"

C.R. Feng, D.J. Michel, C.R. Crowe

Philosophical Magazine Letters, 60(4), 137-140

"A Transmission Electron Microscope Study of APB in TiAl"
C.R. Feng, D.J. Michel, C.R. Crowe
Proceedings of the 47th Annual Meeting of the Electron Microscopy Society of America, p. 326

"Twinning in TiAl"
C.R. Feng, D.J. Michel, C.R. Crowe
Scripta Metallurgica, **23**, 1135-1140

"The Effects of Boron in TiAl/Ti₃Al"
C.R. Feng, D.J. Michel, C.R. Crowe
Scripta Metallurgica, **23**, 1707-1712

"The Formation of Ti₃Al within TiAl during the Deformation of XD™ Titanium Aluminide"
C.R. Feng, D.J. Michel, C.R. Crowe
Scripta Metallurgica, **23**, 241-246

"Color Indicator of Cuprate Superconductivity Observed by Polarized Light Microscopy"
H.A. Hoff, M.R. Rubinstein, M.S. Osofsky, A.K. Singh, L.E. Richards, W.L. Lechter, L.E. Toth, B.N. Das, C.S. Pande
Journal of Superconductivity, **2**(3), 351

"Intra- and Intergranular Fracture of Diamond Thin Films"
H.A. Hoff, A.A. Morrish, J.E. Butler, B.B. Rath, W.A. Carrington
Materials Research Society Symposium Proceedings, **162**, November, Boston MA, pp. 279-284

"The Color of Polarization in High Temperature Superconductors"
H.A. Hoff, M.S. Osofsky, W.L. Lechter, L.E. Toth, M.R. Rubinstein, T.A. Vanderah, B.N. Das, L.E. Richards, R.J. Soulen Jr., S.A. Wolf, C.S. Pande
Physica C, **162-164**, 1115-1116

"Twins in High T_c Superconductors"
H.A. Hoff, C.S. Pande
in *Studies of High Temperature Superconductors*, **3**, (NOVA Science Publishers, Inc.), p. 333

"The Nature of Microcrystalline Regions Produced by an *in situ* Transformation of T2 Particles in a Ternary Al-2.5%Li-2.5%Cu Alloy"
P.R. Howell, D.J. Michel, E. Ryba
Scripta Metallurgica, **23**, 825-828

"Preparation of Dense Bulk High T_c Superconducting Materials using Hot Isostatic Pressing"
M.A. Imam, A.K. Singh, K. Sadananda, M.S. Osofsky
IEEE Transactions on Magnetics, **25**(2), 2010

"Environmental Effects on Advanced Materials"
R.H. Jones, C.H. Henager, P.P. Trzaskoma, N.S. Stoloff, T.P. Moffat, B.D. Lichter
Journal of Metals, **40**(12), 18-30

"Comparisons of Localized Ionic Currents as Measured from 1-D and 3-D Vibrating Probes with Finite Element Predictions for an Iron-Copper Galvanic Couple"
R.G. Kasper, C.R. Crowe
in *ASTM STP 978*, H. P. Hack, ed., (ASTM, Philadelphia), pp. 118-135

"Molecular Dynamics Simulation of (N₂)₂ Formation Using the Monotonic Lagrangian Grid"
S.G. Lambrakos, J.P. Boris, R.H. Guirguis, M. Page, E.S. Oran
Journal of Chemical Physics, **90**(8), 4473

"A Modified Shake Algorithm for Maintaining Rigid Bonds in Molecular Dynamics Simulations of Large Molecules"
S.G. Lambrakos, J.P. Boris, E.S. Oran, I. Chandrasekhar, M. Nagumo
Journal of Computational Physics, **85**(2), 473

"Molecular-Dynamics Simulations of Shock-Induced Detonations in Solids"
S.G. Lambrakos, M. Peyrard, E.S. Oran, J.P. Boris
Physical Review B, **39**(2), 993

"On the Achievement of Strength at High Temperature in Binary Alloys"
N.P. Louat, M.A. Imam
Scripta Metallurgica, **23**, 721-726

"Thermodynamic Aspects of the Crevice Corrosion of Iron in Chromate/Chloride Solutions"

E. McCafferty

Corrosion Science, 9(4), 391-301

"Corrosion Protection by Surface Modification"

E. McCafferty

Proceedings of the 33rd Sagamore Army Materials Research Conference, Corrosion Prevention and Control, 28, Burlington, VT, p. 344

"The Mg-Concentration Dependence of the Strength of Al-Mg Alloys During Glide-Controlled Deformation"

T.R. McNelley, D.J. Michel, A. Salama

Scripta Metallurgica, 23, 657-1662

"Experimental Laser Welding Thermal Cycles, Part I: Welding Efficiency"

E.A. Metzbower

Journal of Laser Applications, 7, 9-15

"Experimental Laser Welding Thermal Cycles, Part II: Temperature Profiles"

E.A. Metzbower

Journal of Laser Applications, 7, 16-21

"Thermal Profiles and HAZ Hardness in Laser Beam Welding"

E.A. Metzbower

Proceedings of the Conference on The Laser versus The Electron Beam in Welding, Cutting and Surface Treatment, Part I, p. 101

"Effects of Sulfur on Mechanical Properties of Laser Welds of Structural Steels"

D.W. Moon, E.A. Metzbower, R.H.

Phillips, P.E. Denney

Proceedings of the Conference on The Laser versus The Electron Beam in Welding, Cutting and Surface Treatment, Part II, p. 280

"The Mechanism of Blister Formation and Rupture in the Pitting of Ion-Implanted Aluminum"

P.M. Natishan, E. McCafferty

Journal of the Electrochemical Society, 136(1), 53

"The Electrochemical Behavior of Diamond Coated Molybdenum"

P.M. Natishan, A.A. Morrish

Materials Letters, 8(8), p. 269

"Localized Corrosion Behavior of Aluminum Surface Alloys Produced by Ion Implantation and Ion Beam Mixing"

P.M. Natishan, E. McCafferty, G.K.

Hubler

Materials Science and Engineering, A116, 41-36

"Surface Preparation of Aluminum for Ion Implantation"

P.M. Natishan, G.T. Peace, P.F.

Slebodnick

Metallurgy, 23, 21-26

"Passivity and Its Breakdown as Influenced by Ion Beam Alloying"

P.M. Natishan, E. McCafferty, G.K.

Hubler

Proceedings of the Environmental Degradation of Ion and Laser Beam Treated Surfaces Conference, p. 167

"Microwave Surface Resistance of Bulk TlBaCaCuO Superconductors"

H.S. Newman, A.K. Singh, K.

Sadananda, M.A. Iman

Applied Physics Letters, 54, 389-390

"Effect of Alloying on the Superconducting Properties of ErBa₂Cu₃O₇"

C.S. Pande, H.A. Hoff, A.K. Singh, M.S.

Osofsky, M.A. Imam, K. Sadananda, L.E. Richards

IEEE Transactions on Magnetics, 25(2), 2004

"Role of Grain Boundaries in High T_c Superconductors"

C.S. Pande, H.A. Hoff, T.L. Francavilla,

L.E. Richards, H.R. Khan

Proceedings of the The Metallurgical Society Symposium on High Temperature Superconducting Compounds: Processing & Related Properties, p. 155

"Phase Transformations in 'Single Crystal' Fragments of the T2(Al₆CuLi₃) Phase"

A. Ramani, M.H. Tosten, D.J. Michel,

C.W. Bartges, E. Ryba, P.R. Howell

in *Aluminum-Lithium*, p. 777

"Transmission Electron Microscopy of Icosahedral Phase in Al-Li-Cu Alloys"
J.R. Reed, D.J. Michel, A.K. Singh
Metallography, **22**, 283-292

"Influence of Ion-Milling on the T2 Phase in Al-2.5%Li-2.5%Cu Alloy"
J.R. Reed, D.J. Michel, P.R. Howell
Proceedings of the 47th Annual Meeting of the Electron Microscopy Society of America, p. 288

"Edge Cracks in a Laminated Cross-Ply Strip"
R.L. Ryan, S. Mall
International Journal of Fracture, **40**, 127-141

"Interaction of Shear Waves with a Periodic Array of Rigid Strips"
R.L. Ryan, S. Mall
International Journal of Solids and Structures, **25**(5), pp. 553-561

"Tensile Behavior and Microstructure of an Aluminum-Lithium-Copper Alloy"
H.H. Smith, J.R. Reed, D.J. Michel, T.R. McNelley
in *Aluminum-Lithium*, p. 943

"Fatigue Crack Propagation in Rapidly Solidified Aluminum Alloys at 25C and 300C"
H.H. Smith, D.J. Michel, J.R. Reed
Metallurgical Transactions A, **20A**, p. 2425

"On the Origin and Nature of Microcrystalline Regions in an Al-Li-Cu-Zr Alloy"
M.H. Tosten, A. Ramani, C.W. Bartges, D.J. Michel, E. Ryba, P.R. Howell
Scripta Metallurgica, **23**, 829-834

"The Effects of Silicon Carbide Whiskers on the Initiation and Propagation of Pits on Silicon Carbide/Aluminum Metal Matrix Composites"
P.P. Trzaskoma
Proceedings of the 10th International Congress on Metallic Corrosion, November, Madras India, p. 231

"Microstructural Modeling of Recrystallization in Deformed Iron Single Crystals"
R.A. Vandermeer, B.B. Rath
Metallurgical Transactions A, **20A**, 1933-1942

"Modeling Recrystallization Kinetics in a Deformed Iron Single Crystal"
R.A. Vandermeer, B.B. Rath
Metallurgical Transactions A, **20A**, 391-301

"Modeling of Recrystallization"
R.A. Vandermeer, B.B. Rath
Proceedings of the 10th RISO International Symposium on Metallurgy and Materials Science: Materials Architecture, Denmark, pp. 589-599

"X-ray and Electron Channeling Characterization of CVD and Combustion Deposited Diamond"
R.G. Vardiman, C.L. Vold, K.A. Snail, J.E. Butler, C.S. Pande
1st ONR Diamond Technology Initiative Symposium, July, Crystal City, VA

"X-ray and Electron Channeling Characterization of CVD and Combustion Deposited Diamond"
R.G. Vardiman, C.L. Vold, K.A. Snail, J.E. Butler, C.S. Pande
Materials Letters, **8**(11-12), p. 468

"Microstructures in SiC and Si₃N₄ Implanted with Ti and Heat Treated"
R.G. Vardiman
Materials Research Society Symposium Proceedings, **128**, pp. 369-374

MATERIALS PHYSICS

"Critical Current Density Measurements of Thin Films of YBaCuO"

L.H. Allen, J.H. Claassen, P.R.

Broussard

IEEE Transactions on Magnetism, **25**(2), 2345-2347

"Technique for Measuring the Elementary Pinning Force in Thin Films"

L.H. Allen, J.H. Claassen

Physical Review B, **39**(4), 2054

"Characterization of Thin YBaCuO Films Grown by Co-evaporation"

P.R. Broussard, J.H. Claassen, S.A. Wolf

IEEE Transactions on Magnetism, **25**(2), 2356-2359

"Heat Capacity and Transport Measurements in Sputtered Niobium-Zirconium Multilayers"

P.R. Broussard, D. Mael

Physical Review B, **40**(4), 2321

"High T_c Thin Film Research at NRL"

P.R. Broussard

Proceedings of the Conference on the Science and Technology of Thin Film Superconductors, p. 91

"Superconducting Films of YBaCuO"

P.R. Broussard, J.H. Claassen, M.S. Osofsky, S.A. Wolf, C.R. Gossett, R.J. Soulen Jr.

Proceedings of the International Discussion Meeting on High- T_c Superconductors, Salzburg, Austria, February, p. 341

"Chaos and Chaotic Transients in an Yttrium Iron Garnet Sphere"

T.L. Carroll, L.M. Pecora, F.J. Rachford

Physical Review A, **40**(1), 377

"Lyapunov Exponents Near a Crisis in a Spin Wave Experiment"

T.L. Carroll, L.M. Pecora, F.J. Rachford

Physical Review A, **40**, 4149

"Effect of Surface Roughening on Chaos in Yttrium-Iron-Garnet Spheres"

T.L. Carroll, L.M. Pecora, F.J. Rachford

Physical Review B, **40**(4), 2327

"Inductive Measurements of Critical Current Density in Superconducting Thin Films"

J.H. Claassen

IEEE Transactions on Magnetism, **25**(2), 2233-2236

"Investigation of Noise Sources in SQUID Electronics"

T.R. Clem, M.J. Goldstein, J.W. Purpura,

L.H. Allen, J.H. Claassen, D.U. Gubser, S.A. Wolf

IEEE Transactions on Magnetism, **25**(2), 1012-1017

"Nonlinear Optical Response of Granular Y-Ba-Cu-O Films"

J.C. Culbertson, U. Strom, S.A. Wolf, P.R.

Skeath, E.J. West, W.K. Burns

Physical Review B, **39**(16), 12359

"Casting High T_c Superconducting BISCCO"

B.N. Das, L.E. Toth, R.J. Rayne, B.A.

Bender, M.S. Osofsky, R.J. Soulen Jr.,

W.L. Lechter, N.C. Koon, S.A. Wolf

Journal of Superconductivity, **2**(2), 253

"Crystal Growth of Bi-Sr-Ca-Cu-O High T_c Superconductors"

B.N. Das, L.E. Toth, R.J. Rayne, B.A.

Bender, S.H. Lawrence, H.A. Hoff, M.S.

Osofsky, R.J. Soulen Jr.

Proceedings of the The Metallurgical Society Symposium on High Temperature Superconducting Compounds: Processing & Related Properties, p. 47

"Lattice Defects in the Charge Density Wave System NbSe₃"

A.C. Ehrlich, T.M. Tritt, D.J. Gillespie,

G.X. Tessema

Materials Science Forum, **37**, 253-266

"Long-Range Coherence Strain and Tilted Epitaxy in Ag-Fe-Ag Sandwich Structures on GaAs(001) Substrates"

R.F.C. Farrow, V.S. Speriosu, S.S.P.

Parkin, C.-L. Chien, J.C. Bravman, R.F.

Marks, P.D. Kirchner, G.A. Prinz, B.T.

Jonker

Materials Research Society Symposium Proceedings, **130**, p. 281

"Further Studies of a Laser Quenched Superconducting Opening Switch"
T.L. Francavilla, R.A. Hein, H.H. Nelson, A.P. Baranavski, S.A. Wolf, D.U. Gubser
IEEE Transactions on Magnetics, **25**(2), 1996

"Microwave Measurements on High T_c Superconducting Single Crystals and Films"
W.W. Fuller, F.J. Rachford, W.L. Lechter, P.R. Broussard, L.H. Allen, J.H. Claassen
IEEE Transactions on Magnetics, **25**(2), 2394

"Fitting and Interpolating Calibration Data for Carbon-Glass Thermometers"
D.J. Gillespie, A.C. Ehrlich
Cryogenics, **29**, 1092

"High-Temperature Properties of the Bi-Sr-Ca-Cu-O System: Simultaneous Occurrence of Melting, Oxygen Desorption, and a Metal-Insulator Transition"
M.Z. Harford, M.R. Rubinstein, A.K. Singh, A.E. Edelstein, S.A. Wolf
Journal of Superconductivity, **1**(4)

"Determination of Overlayer Growth by Angle-Resolved Auger Electron Spectroscopy"
Y.U. Idzerda, D.M. Lind, G.A. Prinz
Journal of Vacuum Science & Technology, **A7**(3), 1341

"Structure Determination of Metastable Cobalt Films"
Y.U. Idzerda, W.T. Elam, B.T. Jonker, G.A. Prinz
Physical Review Letters, **62**(21), 2480

"Structural Characterization of $Zn_{(1-x)}Co_xSe$ Epilayers on GaAs (001)"
B.T. Jonker, S.B. Qadri, J.J. Krebs, G.A. Prinz, L. Salamanca-Young
Journal of Vacuum Science & Technology, **A7**(3), 1360

"MBE Growth and Characterization of Fe- and Co-Based Diluted Magnetic Superconductors"
B.T. Jonker, J.J. Krebs, G.A. Prinz, X. Liu, A. Petrou, L. Salamanca-Young
Materials Research Society Symposium Proceedings, **151**, p. 151

"A Study of Epitaxial Fe Films on Ag(001) by Spin- and Angle-Resolved Photoemission"
B.T. Jonker, G.A. Prinz, K.H. Walker, E. Kisker, C. Carbone
in *Metallic Multilayers and Epitaxy*, M. Hong, S. Wolf, D.U. Gubser, eds., (TMS), p. 185

"Growth and Magnetic Characterization of Mn Films and Superlattices on Ag(001)"
B.T. Jonker, J.J. Krebs, G.A. Prinz
Physical Review B, **39**(2), 1399

"Se Passivation and Re-Growth on ZnSe and (Zn,Mn)Se (001) Epilayer Surfaces"
B.T. Jonker, J.J. Krebs, G.A. Prinz
Proceedings of the American Institute of Physics Conference, **167**, American Vacuum Society Series 4, p. 347

"On the Theoretical Understanding of High Performance Permanent Magnet Materials"
N.C. Koon
Materials Science and Engineering, **B3**, 393-396

"Magnetic and Microwave Properties of Fe/Ag(001) Superlattices Containing Ultrathin Fe Layers"
J.J. Krebs, B.T. Jonker, G.A. Prinz
Journal De Physique, **C8**, 1707

"Magnetic Resonance Studies of Fe/Ag Superlattices with Fe Layers <6 Monolayers Thick"
J.J. Krebs, B.T. Jonker, G.A. Prinz
Materials Research Society Symposium Proceedings, **151**, p. 23

"Magnetic Resonance Determination of the Antiferromagnetic Coupling of Fe Layers Through Cr"
J.J. Krebs, P. Lubitz, A. Chaiken, G.A. Prinz
Physical Review Letters, **63**(15), 1645

"Properties of the New High T_c Materials: An Analysis Based on Fermiology"

V.Z. Kresin, G. Deutscher, S.A. Wolf
IEEE Transactions on Magnetics, **25**(2), 2333

"Normal and Superconducting Properties of the High T_c Oxides"

V.Z. Kresin, S.A. Wolf
Journal of Scientific & Industrial Research, **48**, 559-567

"A Method for Evaluating the Electron-Phonon Coupling in Cuprates from Heat Capacity Measurements"

V.Z. Kresin, S.A. Wolf
Physica C, **158**, 76-78

"Electron Phonon Coupling Gap Anisotropy and Multigap Structure in the High Transition Temperature Cuprates"

V.Z. Kresin, S.A. Wolf
Proceedings of the 10th Winter Meeting on Low Temperature Physics, High Temperature Superconductors, Progress in High Temperature Superconductivity, **20**, p. 23

"Fermiology of High T_c Films and the Proximity Effect"

V.Z. Kresin, S.A. Wolf
Proceedings of the Conference on the Science and Technology of Thin Film Superconductors, p. 527

"Chemically Homogeneous Fine-Grained Mn-Zn Ferrites by Spray Drying"

K. Kumar, A. Petrovich, C.M. Williams, J.B. VanderSande
Journal of Applied Physics, **65**(5), 2014

"Resonant Excitation of an Oxygen Valence Satellite in Photoemission from High- T_c Superconductors"

R.L. Kurtz, S.W. Robey, R.L. Stockbauer, D. Mueller, A. Shih, L.E. Toth
Physical Review B, **39**(7), 4768-4771

"Magnetorefectivity Study of Excitons in (Zn,Co) Se Epilayers"

X. Liu, A. Petrou, B.T. Jonker, G.A. Prinz, J.J. Krebs, J. Warnock
Applied Physics Letters, **55**(10), 1023

"Magnetorefectivity Study of Excitons in MBE Grown $Zn_{(1-x)}Fe_xSe$ Crystals"

X. Liu, A. Petrou, G.A. Prinz, B.T. Jonker, J.J. Krebs, J. Warnock
Materials Research Society Symposium Proceedings, **102**, p. 215

"Ferromagnetic Resonance Measurements on Epitaxial Grown Fe/ZnSe and Co/ZnSe Films on GaAs Substrates"

S.A. Oliver, C. Vittoria, J.J. Krebs, B.T. Jonker, G.A. Prinz
Journal of Applied Physics, **65**(7), 2799

"Reconstruction Techniques in Angular Correlation of Positron Annihilation Experiments"

L.M. Pecora
Journal of Physics: Condensed Matter, **1**, SA1-SA16

"Homogeneous Fine-Grained Mn-Zn Ferrites by Sintering of Colloidally Precipitated Powders"

A. Petrovich, K. Kumar, C.M. Williams
Journal of Applied Physics, **64**(10), 5644

"Chaos in Polished and Roughened YIG Spheres"

F.J. Rachford, T.L. Carroll, L.M. Pecora
Journal De Physique, **C8**, 1595

"Mossbauer Hyperfine Fields in $RBa_2(Cu_{0.97}Fe_{0.03})_3O_{(7-x)}$ [R=Y,Pr,Er]"

M.R. Rubinstein, M.Z. Harford, L.J. Swartzendruber, L.H. Bennett
Journal De Physique, **C8**, 2209

"Some Normal State Properties of High T_c Compounds"

M.R. Rubinstein, M.Z. Harford, T.K. Chaki, L.J. Swartzendruber, L.H. Bennett
Proceedings of the High- T_c Superconductors: Magnetic Interactions, October, Gaithersburg MD, p. 292

"C-Axis Thermal Expansion of the $Tl_2Ba_2CaCu_2O_x$ Superconductor"

E.F. Skelton, W.T. Elam, M.S. Osofsky, P. Lubitz, M.Z. Harford, A.K. Singh
Physical Review B, **39**(4), 2779

"Copper Coupling Reactions of 1,3-Bis(2-Hydroxyhexafluoro-2-Propyl)-5-Iodobenzene and Its Derivatives"

R.J. Soulen Jr., J.R. Griffith
Journal of Fluorine Chemistry, **44**, 195

"Preparation of 1,3,5-tris(2-hydroxyhexafluoro-2-propyl) Benzene and Some Of Its Derivatives"

R.J. Soulen Jr., J.R. Griffith
Journal of Fluorine Chemistry, **44**, 203

"Superconductivity Research at the Naval Research Laboratory"

R.J. Soulen Jr., M.S. Osofsky, L.E. Toth, L.A. Allen, W.W. Fuller, W.T. Elam, J.H. Claassen, V. LeTourneau, P.R. Broussard, S.B. Qadri, E.F. Skelton, W.L. Lechter, R.J. Rayne, R. Gossett, F.J. Rachford, H.A. Hoff, B.N. Das, M.Z. Harford, P. Lubitz, S.A. Wolf
Proceedings of the International Conference on Cryogenics and Refrigeration, p. 367

"Effect of Elastic Tension on the Electrical Resistance of HfTe_5 and ZrTe_5 "

E.P. Stellwell, A.C. Ehrlich, G.N. Kamm, D.J. Gillespie
Physical Review B, **39**(3), 1626

"Photoconductive Response of Granular Superconducting Films"

U. Strom, E.S. Snow, R.L. Henry, P.R. Broussard, J.H. Claassen, S.A. Wolf, M.T. Leung, R.W. Simon
IEEE Transactions on Magnetics, **25**, 1315-1318

"Light Detection with Granular Superconducting Films"

U. Strom, J.C. Culbertson, S.A. Wolf
NRL Review

"Far Infrared Photoresponse of Two-Dimensional Granular $\text{YBa}_2\text{Cu}_3\text{O}_{(7-x)}$ Films"

U. Strom, J.C. Culbertson, S.A. Wolf
Proceedings of the SPIE, 1187 Processing of Films for High T_c Superconducting Electronics, p. 290

"Chemical Casting of High T_c Superconducting BiSCCO"

L.E. Toth, B.N. Das, R.J. Rayne, B.A. Bender, W.L. Lechter, H.A. Hoff, M.S. Osofsky, R.J. Soulen Jr.
Proceedings of the The Metallurgical Society Symposium on High Temperature Superconducting Compounds: Processing & Related Properties, p. 223

"Pressure Contact Probe for Resistivity Measurements in the Temperature Range 77K to 200K"

T.M. Tritt, A.C. Ehrlich, H.S. Davis
Review of Scientific Instruments, **60**(5), 956

"Magnetic Relaxation Effects in (57)Fe/Ag Superlattices from Conversion Electron Mossbauer Spectroscopy"

F.A. Volkening, B.T. Jonker, J.J. Krebs, G.A. Prinz, N.C. Koon
Journal De Physique, **C8**, 1699

"High Temperature-High Pressure Synthesis of a New Phase of LaCuO_3 "

A.W. Webb, E.F. Skelton, S.B. Qadri, E.R. Carpenter, M.S. Osofsky, R.J. Soulen Jr., V. Letourneau
Physics Letters A, **137**(4,5), 205

"High Field Torque Measurements on Dilute Single Crystal $\text{Y}_{(2-x)}\text{Nd}_{(x)}\text{Fe}_{(14)}\text{B}$ "

C.M. Williams, N.C. Koon, B.N. Das
Journal De Physique, **C8**, 567

"Introductory Statement"

S.A. Wolf, D.U. Gubser
Journal of Superconductivity, **1**(1), 1-2

"A Study of Epitaxial Fe Films on $\text{Ag}(001)$ by Spin- and Angle-Resolved Photoemission"

S.A. Wolf, D.U. Gubser
in *Metallic Multilayers and Epitaxy*, M. Hong, S. Wolf, D.U. Gubser, eds., (TMS), p. 185

"A Unified Approach to the Description of High T_c Oxides: Major Normal and Superconducting Parameters"

S.A. Wolf, V.Z. Kresin
Physica C, **162-164**, 217-218

"Superconductivity Research at the Naval Research Laboratory"
S.A. Wolf, M.S. Osofsky, L.E. Toth, L.A. Allen, W.W. Fuller, J.H. Claassen, V. LeTourneau, P.R. Broussard, W.T. Elam, S.B. Qadri, E.F. Skelton, C.M. Williams, L. Lechter, R. Rayne, R. Gossett, F.J.

Rachford, H.A. Hoff, B.N. Das, P. Lubitz, R.J. Soulen Jr.
Proceedings of the The Metallurgical Society Symposium on High Temperature Superconducting Compounds: Processing & Related Properties, p. 641

COMPOSITES AND CERAMICS

"Simulation of Elastic Stresses and Polarization in Piezoelectric Ceramic by the Finite Difference Method"
W.B. Carlson, M. Kahn
Ferroelectrics, **99**, 165-172

"Shape Instabilities of Plate-Like Structures -II. Analysis"
T.H. Courtney, J.C. Malzahn-Kampe
Acta Metallurgica, **37**, (7), 1747-1758

"Modeled and Experimental Fracture Results on PZT Ceramics"
M.S. Duesbery, M. Kahn, D.I. Lewis III
Ferroelectrics, **87**, 197-208

"Viscoelastic Effect of Heat Treatment on the Fracture Toughness of Metal-Particulate/Glass-Matrix Composites"
T.L. Jessen, J.J. Mecholsky
Journal of the American Ceramic Society, **72**(11), 2094-2097

"Modified Specimen Preparation for Applied-Moment Double-Cantilever-Beam Testing"
T.L. Jessen, D.I. Lewis III
Journal of the American Ceramic Society, **72**(11), 2196-2197

"Effect of Crack Velocity on Crack Resistance in Brittle-Matrix Composites"
T.L. Jessen, D.I. Lewis III
Journal of the American Ceramic Society, **72**(5), 818-821

"Patterned Voids for the Reduction of the Dielectric Constant of Microstrip Transmission Lines"
M. Kahn, C.J. Scott
Advances in Ceramics, **26**, 447

"Calculations and Measurements of the Spatial Piezoelectric Response and of the d15 Parameter of PZT5A Ceramic"
M. Kahn, R.P. Ingel, D.I. Lewis III
Journal of the American Ceramic Society, **72**(5), 785-790

"Shape Instabilities of Plate-Like Structures -I. Experimental Observations in Heavily Cold Worked *in situ* Composites"
J.C. Malzahn-Kampe, T.H. Courtney, Y. Leng
Acta Metallurgica, **37**, (7), 1735-1745

"Transverse Kinking of BCC Fibers in Drawn FCC(Matrix)-BCC(Dispersoid) *in-situ* Composites"
J.C. Malzahn-Kampe, T.H. Courtney
Scripta Metallurgica, **23**, 141-145

"Microstructure and Mechanical Properties of Mullite-Silicon Carbide Composites"
M.I. Osendi, B.A. Bender, D.I. Lewis III
Journal of the American Ceramic Society, **72**(6), 1049-1054

"Low Temperature Formation of Titanium Aluminide Films Using Physical Vapor Deposition"
D.K. Perkins, E.I. Keith, A. Pattnaik, W.F. Henshaw
NRL Memorandum Report 6393

"Methods of Producing High Strength Materials by Electrolysis Plating, Liquid Infiltration and Compaction of Powders"
V. Provenzano, N.P. Louat, K. Sadananda, M.A. Imam, C.J. Skowronek, J.M. Calvert, B.B. Rath
Proceedings of The Metallurgical Society 2nd International Conference on Surface Modification Technologies, p. 313

"Preliminary Studies for the Development of Superconducting Composite Wires"
V. Provenzano, W.F. Henshaw, A.S. Edelstein, A.K. Singh, M.A. Imam, M.S. Osofsky, E.F. Skelton, S.B. Qadri
IEEE Transactions on Magnetics, 25(2), 2320

"Ceramic Fiber Composites Based Upon Refractory Polycrystalline Ceramic Matrices"

R.W. Rice, D.I. Lewis III
in *Reference Book for Composites Technology*, S.M. Lee, ed., (Technomic Publ., Lancaster PA), 1, pp. 117-142

"Dislocation Structures Within Spinel Crystal Fracture Surfaces"

G.Y. Richardson, C.C. Wu, R.W. Armstrong
in *Ceramic Materials and Components for Engines*, p. 1039

"Mechanical Damping and Dynamic Modulus Measurements in Alumina and Tungsten Fibre-Reinforced Aluminium Composites"

A. Wolfenden, J.M. Wolla
Journal of Materials Science, 24, 3205-3212

"Mechanical Damping and Dynamic Modulus Measurements in Continuous Fiber-Reinforced Composite Materials: Al/Al₂O₃ and Al/W"

A. Wolfenden, J.M. Wolla
Materials Research Society Symposium Proceedings, 153, pp. 409-414

"Case History"

J.M. Wolla
in *Metals Handbook, Nondestructive Evaluation and Quality Control*, 9th ed., 17, Adrian A. Pollock, ed., pp. 288-289

MECHANICS OF MATERIALS

"Ultrasonic Interferometric Characterization of Highly Attenuative Materials"

N.K. Batra, P.P. Delsanto
Journal of the Acoustical Society of America, 85(3), 1167

"Ultrasonic Spectral Analysis for Characterization of Composites"

N.K. Batra
Review of Progress in Quantitative Nondestructive Evaluation, 8B, 1527-1533

"Viscoplastic Analysis of Plate-Impact Spallation"

J. Eftis, J.A. Nemes, P.W. Randles
Proceedings of the 2nd International Symposium on Plasticity and its Current Applications, PLASTICITY '89, Advances in Plasticity, p. 381

"Prediction of Classical Fracture Initiation Toughness"

V.G. Gensheimer-DeGiorgi, G.C. Kirby III, M.I. Jolles
Engineering Fracture Mechanics, 33(5), 773-785

"Correlations Between Micromechanical Features and Material Toughness in HY-100 Steel"

D.P. Harvey II, M.I. Jolles
Journal of Materials Engineering, 10, 267-272

"Defect, Constitutive Behavior, and Continuum Toughness Considerations for Weld Integrity Analysis"

P. Matic, M.I. Jolles
in *Nonlinear Fracture Mechanics: Vol. 2, Elastic-Plastic Fracture*, ASTM STP 995, J.D. Landes, A. Saxena, and J.G. Merkle, eds., (ASTM, Philadelphia), pp. 82-92

"Energy Deposition Phenomena in Partially Transparent Solids"

J.A. Nemes, P.W. Randles
Journal of Thermophysics and Heat Transfer, 3(2), 160-166

"Low-Angle Oblique Impact Spall Fracture Using Viscoplastic Constitutive Theory"

J.A. Nemes, J. Eftis

Proceedings of the International Conference for Constitutive Laws for Engineering Materials ICCLEM (Asia), Chongqing, PRC, August, Advances in Constitutive Laws for Engineering Materials

"Estimating Radiation Conductance of a Thickness-Mode Transducer from Electrical Driving-Point Admittance Measurements"

K.A. Sarkady, H.M. Neustadt, H.H. Chaskelis

CPIA Publication, 514, May, p. 126

"Survivability of GFRP Materials to Continuous Wave and Repetitively Pulsed Laser Irradiation"

F.R. Stonesifer, G.W. Wissinger
NRL Memorandum Report 6582

"Random Thoughts on Interpreting Shock and Vibration Measurements"

R.H. Volin

Shock & Vibration Digest, 21(11), 1

OPTICAL MATERIALS

"Origin and Reduction of Scattering Losses in Fluoride Glasses and Fibers"

I.D. Aggarwal, J.S. Sanghera, B.B.

Harbison, L. Busse, P.C. Pureza

6th International Symposium of Halide Glasses, October, Germany

"Effect of Oxide Substitutions on the Optical and Physical Properties of ZBLAN Glass"

I.D. Aggarwal, A.J. Bruce, M. Chui-Sabourin, A.E. Neeves, M.M. Broer, W.A. Reed

6th International Symposium of Halide Glasses, October, Germany

"Fabrication of Large Fluoride Glass Windows for High Energy Laser Applications"

I.D. Aggarwal, J.M. Jewell, G.M. Williams

High Power Laser Optical Components Conference, October, Boulder CO

"Status of Mid-IR Fibers"

I.D. Aggarwal

IGWO '89 Integrated & Guided Wave Optics Conference, George R. Brown Convention Center, Houston TX

"Origin and Elimination of Scattering Centers in Fluoride Glasses and Fibers"

I.D. Aggarwal, J.S. Sanghera, B.B.

Harbison, L. Busse, P.C. Pureza

Materials Research Society Symposium Proceedings, Boston, November

"Light Scattering Studies in ZBLAN-Glasses at High Temperatures"

L.E. Busse, I.D. Aggarwal, J. Schroeder, L-G. Hwa

6th International Symposium of Halide Glasses, October, Germany

"Design Parameters for Fluoride Multimode Fibers: Effects of Coating and Bending on Loss"

L.E. Busse, I.D. Aggarwal
Materials Research Society Symposium Proceedings, Boston, November

"Approaches to the Accurate Characterization of High Purity Metal Fluoride and Fluoride Glasses"

K.J. Ewing, J. Jaganathan, I.D. Aggarwal
3rd Workshop on Purification of Materials for Crystal Growth and Glass Processing, October, Orlando FL

"Quantitative Analysis of Low Part-Per-Billion Concentrations of Transition Elements in Zirconium and Hafnium Fluorides"

K.J. Ewing, L.E. Peitersen, J. Jaganathan, E. O'Brien, I.D. Aggarwal

6th International Symposium of Halide Glasses, October, Germany

"Reaction of Zirconium Fluoride Monohydrate and Ammonium Bifluoride: Its Effects on Fluoride Glass Preparation and Quality"

K.J. Ewing, J.S. Sanghera, R.E. Miklos, M.G. Sachon, L.E. Peitersen, P. Hart, I.D. Aggarwal

Journal of the American Ceramic Society, 72(8), 1441-1443

"Preparation of High Purity Barium Compounds for Use in Fluoride Glasses"

K.J. Ewing, L.E. Peitersen, J. Jaganathan, I.D. Aggarwal

Middle Atlantic Regional Meeting of the American Chemical Society, May, Cherry Hill NJ

"Reaction Between Zirconium Fluoride and Ammonium Bifluoride"

K.J. Ewing, J.S. Sanghera, R.E. Miklos, M.G. Sachon, L.E. Peitersen, I.D. Aggarwal

Middle Atlantic Regional Meeting of the American Chemical Society, May, Cherry Hill NJ

"Micro-Raman Studies of Fluoride Glass Optical Fibers"

J.A. Freitas, P.C. Pureza, I.D. Aggarwal, U. Strom

6th International Symposium of Halide Glasses, October, Germany

"Radiation-Induced Attenuation in Polarization-Maintaining Fibers: Low Dose Rate Response, Stress and Materials Effects"

E.J. Friebele, L.A. Brambani, M.E. Gingerich, S.J. Hickey, J.R. Onstott
Applied Optics, 28, 5138-5143

"Dimensional Changes in Mirror Substrate Materials Exposed to Radiation"

E.J. Friebele, J.A. Ruller
Large Optics Conference, July, Griffiss AFB NY

"Materials Effects on the Radiation Sensitivity of Single Mode Optical Fibers"

E.J. Friebele, C.G. Askins, M.E. Gingerich, S.J. Hickey, M.A. Putnam, C.M. Shaw

Materials Research Society Symposium Proceedings, Boston, November

"Radiation Effects in Polarization-Maintaining Optical Fiber Waveguides"

E.J. Friebele, C.C. Harrington, L.A. Brambani

O/E Fibers '89, September, Boston MA

"Effect of Fiber Composition and Stress on the Radiation Sensitivity of Polarization-Maintaining Fibers"

M.E. Gingerich, S.J. Hickey, C.C. Harrington, E.J. Friebele
Materials Research Society Symposium Proceedings, Boston MA, November

"Electron Spin Resonance in Glass"

D.L. Griscom
in *Glass Science and Technology IVB: Structure*, D.R. Uhlmann and J.J. Kreidl, eds., (Academic Press)

"Bromine-Associated Defect Centers in Irradiated ZrFe₄-Based Glasses"

D.L. Griscom, R.J. Ginther
Journal of Non-Crystalline Solids, 110, 273-278

"Self-Trapped Holes in Amorphous Silicon Dioxide"

D.L. Griscom
Physical Review B, 40, 4224-4227

"Electron Spin Resonance of Defect Centers in Silica and Other Amorphous Oxides"

D.L. Griscom
Rocky Mountain Conference on Analytical Chemistry, July, Denver CO

"Growth and Decay Kinetics of Defect Centers in High-Purity Fused Silicas Irradiated at 77K with X-rays or 6.4eV Laser Light"

D.L. Griscom
Seminar on Radiation Effects in Insulators -V, Hamilton, Canada, June

"Electron Spin Resonance Investigations of Defects and Defect Processes in Amorphous Silicon Dioxide"

D.L. Griscom
US-Japan Seminar on Atomic Processes Induced by Electronic Excitation in Non-Metallic Solids, September, Nagoya, Japan

"Effects of Oxygen Treatment on Fluoride Glass Light Scattering and Stability"

B.B. Harbison, P. Georgelos, G.H. McCabe, I.D. Aggarwal

6th International Symposium of Halide Glasses, October, Germany

"Fusion Splicing of Heavy Metal Fluoride Glass Optical Fibers"

B.B. Harbison, W.I. Roberts, I.D. Aggarwal

6th International Symposium of Halide Glasses, October, Germany

"Fusion Splicing of Heavy Metal Fluoride Glass Optical Fibers"

B.B. Harbison, W.I. Roberts Jr., I.D. Aggarwal

Electronics Letters, **25**, 1214-1216

"Stability of Low-Silica Calcium Aluminosilicate Glasses"

P.L. Higby, I.D. Aggarwal, R.J. Ginther, E.J. Friebele

American Ceramic Society Glass Division Meeting, September, Orlando FL

"Optical and Physical Properties of Calcium Aluminate Glasses with Small Additions of SiO₂ and GeO₂"

P.L. Higby, R.J. Ginther, L.E. Busse, I.D. Aggarwal, E.J. Friebele

Annual Meeting of the American Ceramic Society, April, Indianapolis IN

"Effects of Radiation on the Properties of Low Expansion Coefficient Materials"

M. Rajaram, E.J. Friebele

Journal of Non-Crystalline Solids, **108**, 1-17

"Optical Studies of Quantum Confined CuCl-Glass Composites"

J.A. Ruller, B.L. Justus, R.J. Ginther, E.J. Friebele, A.J. Campillo

Ceramic Science and Technology Congress, October, Anaheim CA

"New Fluorination Reactions of Ammonium Bifluoride"

J.S. Sanghera, P. Hart, M.G. Sachon, K.J. Ewing, I.D. Aggarwal

6th International Symposium of Halide Glasses, October, Germany

"Defect Centers Induced by the Harmonic Wavelength of 1.06m Light in Ge-P-Doped Silica"

T.E. Tsai, E.J. Friebele, D.L. Griscom
International Ceramic Science & Technology Congress, October, Anaheim CA

"Photoluminescence Induced by 6.4 eV Photons in High Purity Silica"

T.E. Tsai, H-B. Lin, E.J. Friebele, D.L. Griscom

Materials Research Society Symposium Proceedings, November, Boston MA

"Correlation of Defect Centers with Second Harmonic Generation in Ge and Ge-P Doped Silica Core Single Mode Fibers"

T.E. Tsai, M.A. Saifi, E.J. Friebele, D.L. Griscom, U. Osterberg

Optics Letters, **14**, 1023-1025

"Medium Range Structure Order and Fractal Annealing Kinetics of Atomic Hydrogen in High Purity Silica"

T.E. Tsai, D.L. Griscom, E.J. Friebele
Physical Review B, **40**, 6374-6380

"Si E' Centers and UV-Induced Compaction in High Purity Silica"

T.E. Tsai, D.L. Griscom, E.J. Friebele
Seminar on Radiation Effects in

Insulators -V, Hamilton, Canada, June

ADVANCED OPTICS CONCEPTS

"Predictions of Stray Light Modeling on the Ultimate Performance of Acousto-Optic Processors"

R.B. Brown, A.E. Craig, J.N. Lee

Optical Engineering, **28**(12), 1299

"Studies of Diamond Chemical Vapor Deposition"

J.E. Butler, F.G. Celii, D.B. Oakes, L.M. Hanssen, W.A. Carrington, K.A. Snail
Proceedings of the 6th International Conference on High Temperatures, NIST, Gaithersburg MD

"Diamond Growth in O₂ + C₂H₄ and CO₂H₂ Flames"

W.A. Carrington, L.M. Hanssen, K.A. Snail, D.B. Oakes, J.E. Butler
Metallurgical Transactions A, **A1**, 1282-1284

"The NRL Optical Signal Processor (OSP) as an EMSP Functional Element"

R.D. Griffin, J.N. Lee
NRL Memorandum Report 6539

"Software Functions Available on the NRL Optical Broadband Correlator (OBC) for a VAX Host"

R.D. Griffin, J.N. Lee
NRL Memorandum Report 6540

"Diamond Synthesis in Combustion Flames"

L.M. Hanssen, W.A. Carrington, D.B. Oakes, J.E. Butler, K.A. Snail
16th International Conference on Metallurgical Coatings, April, San Diego CA

"Diamond Deposition in Oxygen-Acetylene Flames"

L.M. Hanssen, W.A. Carrington, D.B. Oakes, J.E. Butler, K.A. Snail
1st ONR Diamond Technology Initiative Symposium, July, Crystal City, VA

"Diamond Synthesis in Flames"

L.M. Hanssen, W.A. Carrington, D.B. Oakes, J.E. Butler, K.A. Snail
American Chemical Society Meeting, April, Dallas TX

"Effects of Restricting the Detector Field of View when using Integrating Spheres"

L.M. Hanssen
Applied Optics, **28**, 2097

"Intra- and Intergranular Fracture of Diamond Thin Films"

H.A. Hoff, A.A. Morrish, J.E. Butler, B.B. Rath, W.A. Carrington
Materials Research Society Symposium Proceedings, **162**, November, Boston MA, pp. 279-284

"Interfaced Optical Processor for Undersea Applications"

J.N. Lee, R.D. Griffin
1st National Sensor Fusion Conference, 1, pp. 173

"Optical Modules for Future Signal Processing Systems"

J.N. Lee
22nd International Conference on System Sciences, January, Hawaii, 1, p. 450

"A New High-Stability Configuration for an Acousto-Optic Heterodyne RF Spectrum Analyzer using Slow-Shear TeO₂"

J.N. Lee, R.B. Brown, A.E. Craig
Applied Optics, **28**, 3796

"Acousto-Optic Signal Processing and Computing"

J.N. Lee, A. VanderLugt
Proceedings of the IEEE, **77**(10), 1528

"Effects of Various Surface Treatments, Gases, and Feedstock Materials on the Nucleation Density and Growth Rate of CVD Diamond Films"

A.A. Morrish
1st International Symposium on Diamond and Diamond Like Films, May, Los Angeles CA

"Effects of Surface Treatments, Gases, and Feedstock Materials on the Nucleation Density of CVD Diamond Films"

A.A. Morrish, K.A. Snail, W.A. Carrington
1st ONR Diamond Technology Initiative Symposium, July, Crystal City, VA

"Electrochemical Behavior and Structural Integrity of Diamond Coated Molybdenum"

A.A. Morrish, P.M. Natishan, W.A. Carrington, E. McCafferty
1st ONR Diamond Technology Initiative Symposium, July, Crystal City, VA

"Acousto-Optical Matrix-Vector Matrix Product Processor: Implementation Issues"
E.P. Mosca, R.D. Griffin, F.P. Pursel, J.N. Lee
Applied Optics, **28**, 3843

"Acousto-Optical Vector-Matrix Processor Product Processor: Implementation Issues"
E.P. Mosca, F.P. Pursel, R.D. Griffin, J.N. Lee
NRL Memorandum Report 6372

"The Electrochemical Behavior of Diamond Coated Molybdenum"
P.M. Natishan, A.A. Morrish
Materials Letters, **8**(8), 269

"Adaptive Thresholding and Peak Detection using a Spatial Light Modulator Halftone Processor"
T.K. Oh, A.D. Fisher, J.N. Lee
Technical Digest of the Optical Society of America Annual Meeting, Orlando FL., October

"Real Time Nonlinear Image Processing using Hardclip Thresholding by a Microchannel Spatial Light Modulator"
T.K. Oh, A.D. Fisher, J.N. Lee, M. Karim
Technical Digest of the Optical Society of America Annual Meeting, Orlando FL., October

"Adaptive Optical Filtering Architecture"
M.G. Price, J. Harsanyi, A.E. Craig, J.N. Lee
Technical Digest of the Optical Society of America Topical Meeting on Optical Computing, Salt Lake City UT, February, p. 28

"Experimental Parameters of Photoemitter Membrane Spatial Light Modulator Performance"
P.B. Rolsma, J.N. Lee, T.K. Oh, L.C. Ling
Applied Optics, **28**, 4816

"Integrating Sphere Designs with Isotropic Throughput"
K.A. Snail, L.M. Hanssen
Applied Optics, **28**, 1793

"Hemispherical Transmittance of Several Free-Standing Diamond Films"
K.A. Snail, W.A. Carrington, L.M. Hanssen, A.A. Morrish
Proceedings of the SPIE Conference on Diamond Optics II, August

"Experimental Measurement of Very Small Angle Stray Light Optical Performance of Selected Acousto-Optic Materials"
J. Stover, D.R. Bjork, R.B. Brown, J.N. Lee
in *Growth and Characterizations of Acousto-Optics Materials*, N.B. Singh, ed., (Trans Tech Pub)

"Transport Properties of Molybdenum Silicide Thin Films as a Function of Grain Size"
T.P. Thorpe, A.A. Morrish, S.B. Qadri
Journal of Vacuum Science & Technology, **A7**, 1279

"In-situ Sputter Deposition of Superconducting Bi-Sr-Ca-Cu-O Thin Films"
T.P. Thorpe, M.S. Osofsky, E.F. Skelton, S.B. Qadri, C.R. Gossett
Materials & Mechanisms of Superconductivity Conference, July

"In-situ Sputter Deposition of Superconducting Bi-Sr-Ca-Cu-O Thin Films"
T.P. Thorpe, M.S. Osofsky, E.F. Skelton, S.B. Qadri, C.R. Gossett
Physica C, **162**, 645

"X-ray and Electron Channeling Characterization of CVD and Combustion Deposited Diamond"
R.G. Vardiman, C.L. Vold, K.A. Snail, J.E. Butler, C.S. Pande
1st ONR Diamond Technology Initiative Symposium, July, Crystal City, VA

"X-ray and Electron Channeling Characterization of CVD and Combustion Deposited Diamond"
R.G. Vardiman, C.L. Vold, K.A. Snail, J.E. Butler, C.S. Pande
Materials Letters, **8**(11-12), 468

APPLIED OPTICS

"Active Infrared Countermeasure
Susceptibility of Rochelle Salt(S)"
F.R. Barone

IRIS Infrared Countermeasure
Conference, May

"Integrated Optical Mode
Converter/Frequency Shifter in
Ti:LiTaO₃"

P.H. Howerton, W.K. Burns, R.P. Moeller
Proceedings of the IGWO '89 Integrated &
Guided Wave Optics Conference, Houston
TX, February, p. 250

"Output Beam Steering in a High
Reflectivity Brillouin Enhanced Four
Wave Mixing Phase Conjugator"

P.S. Lebow
IEEE Journal of Quantum Electronics, **25**,
479

"High Gain Optical Phase Conjugation"

P.S. Lebow, J.A. Ackerman
Optical Society of America Annual
Meeting, October, Orlando FL

"Phase Conjugation *vis* Brillouin
Enhanced Four Wave Mixing"

P.S. Lebow
Optics Letters, **14**, 236

"Photoinduced Excitations in
Semiconducting YBa₂Cu₃O_{7-D}"

J.M. Leng, J.M. Ginder, M.G. Roe, A.J.
Epstein, W.E. Farneth, S.I. Shah, E.M.
McCarron
American Physical Society, March,
St. Louis MO

"Missile Signature Measurements at NWC
SNORT Track in Support of the AN/AAR-
47 Missile Warning Set and Variants"

T.H. May, D.M. Cordray, D. Papcke, D.
Johnson, C. Kaufer, D. Reilly, A. Liese,
W. Clark, T.H. Cosden
27th Symposium of the IRIS Specialty Group
on Infrared Countermeasures, May,
Applied Physics Laboratory

"Massive Polarons in Large-Gap
Polymers"

R.P. McCall, J.M. Ginder, M.G. Roe, G.E.
Asturias, E.M. Scherr, A.G. MacDiarmid,
A.J. Epstein
Physical Review B, **39**, 10174

"Acceleration and Deformation
Measurements using Coherent Laser
Radar"

M.G. Roe, A.L. Huston, B.L. Justus
LASERS '89, December, New Orleans LA

"Picosecond Photoinduced Exciton
Bleaching in Emeraldine Base: Crossover
in Decay Mechanisms"

M.G. Roe, J.M. Ginder, T.L. Gustafson,
M. Angelopoulos, A.G. MacDiarmid, A.J.
Epstein
Physical Review B, **40**, 4187

"Limitations on Passive Coherence
Filtering due to Properties of the Impulse
Response"

L.J. Sica
*Journal of the Optical Society of
America A*, **6**, 1755-1759

LASER PHYSICS

"Stimulated Emission in Atomic
Hydrogen from the Balmer-Transition"

R.C.Y. Auyeung, D.G. Cooper, S. Kim,
B.J. Feldman
Joint Optical Society/IEEE LEOS Annual
Meeting, October, Orlando FL

"Stimulated Anti-Stokes Raman
Scattering in Inverted Atomic Selenium"

R.C.Y. Auyeung, D.G. Cooper, B.J.
Feldman
Optical Society of America Annual
Meeting, October, Orlando FL

"3 Micron Laser Performance of
Nd,Ho:YALO₃"

S.R. Bowman, A. Bowman
CLEO/QELS '89, April, Baltimore MD

"A Neodymium YALO Based Blue
Communications Transmitter"

S.R. Bowman, B.J. Feldman, J.M.
McMahon, A. Bowman
LASERS '89, December, New Orleans LA

"Laser Techniques and Frequency Conversion for a Neodymium Based Blue Communication Transmitter"

S.R. Bowman, B.J. Feldman, J.M.

McMahon, A. Bowman, D. Scarl

Tunable Solid State Lasers Conference, Cape Cod, MA, May

"Stimulated Effects and Optical Resonances in Microspheres"

A.J. Campillo, J.D. Eversole, H.B. Lin

Optical Society of America Annual Meeting, October, Orland, FL

"Ultra-narrow Linewidth Excimer Laser"

C. Christensen, B.J. Feldman, A.L.

Huston

Applied Optics, **28**, 3771-3774

"Room Temperature Fluorescence from Arymethly Radicals in Solution"

B. Craig, M. Sonnenschein

Journal of Luminescence, **43**, 227-232

"Ejection of Excimers from the Surface of Solid Argon upon Excitation Self-Trapping"

S.T. Cusi, R.E. Johnson, C.T. Reimann,

J.W. Boring

Physical Review B, **39**, 345-348

"An Optical Isolator at 308 Nm"

J.L. Dexter, D.G. Cooper, L.L. Tankersley,

J. Landry, J.F. Reintjes

IEEE/LEO's '89, October, Orlando FL

"Narrow-Bandwidth Excimer Laser Operation using Coupled Stable/Unstable Resonators"

J.L. Dexter, D.G. Cooper, L.L. Tankersley,

J. Landry, J.F. Reintjes

IEEE/LEO's '89, October, Orlando FL

"Simultaneous Multiline Stimulated Brillouin Scattering in the 3m Region"

M.T. Duignan, B.J. Feldman, W.

Whitney

Proceedings of the SPIE, **1060**, pp. 41-48

"Metal C Ring Window Seals"

M.T. Duignan, D.J. Gerhardt, W.

Whitney

Review of Scientific Instruments, **60**, 3537-3539

"Measurement of Beam Quality using Digitized Laser Beam Images"

M.D. Duncan, R. Mahon

Applied Optics, **28**, 4569-4575

"Wavefront Preservation in a Transient Raman Amplifier"

M.D. Duncan, R. Mahon, L.L.

Tankersley, J.F. Reintjes

CLEO/QELS '89, April, Baltimore MD

"Experimental Study of Transient Spontaneous Raman Scattering"

M.D. Duncan, R. Mahon, L.L.

Tankersley, J.F. Reintjes

Optical Society of America Annual

Meeting, October, Orlando FL

"Second Stokes Generation in Hydrogen and Deuterium"

M.D. Duncan, R. Mahon, L.L.

Tankersley, J.F. Reintjes

CLEO/QELS, April, Baltimore MD

"Origins of 2nd Stokes Generation"

M.D. Duncan, R. Mahon, L.L.

Tankersley, J.F. Reintjes

Proceedings of the SPIE, CA

"Explosive Molecular Ionic Crystals"

W.L. Faust

Science Magazine, **245**, 37-42

"Coherent Laser Radar Measurements on High Velocity Targets"

A.L. Huston, M.G. Roe

IEEE/LEO's '89, October, Orlando FL

"Efficient Photogeneration of Triplets in Shock Compressed 2,4-Dinitrostilbene"

B.L. Justus, C.D. Merritt, A.J. Campillo

American Physical Society Topical

Conference on Shock Compression of

Condensed Matter, August,

Albuquerque, NM

"Efficient Photogeneration of Triplets in Shock Compressed 2,4-Dinitrostilbene"

B.L. Justus, C.D. Merritt, A.J. Campillo

Chemical Physics Letters, **156**, 64-71

"The Effects on Triplets on the Shock Chemistry of 2,4-Dinitrostilbene"

B.L. Justus, C.D. Merritt, A.J. Campillo

Topical Conference on Shock Waves in

Condensed Matter, Albuquerque NM,

August

"Multiple Order Morphology-Dependent Resonances Observed in Lasting Droplets"
H.B. Lin, J.D. Eversole, A.J. Campillo
CRDEC Scientific Conference of
Obscuration and Aerosol Research,
Aberdeen, MD, June

"Observations of MIE Resonances in Layered Microspheres"
H.B. Lin, J.D. Eversole, A.J. Campillo
CRDEC Scientific Conference of
Obscuration and Aerosol Research,
Aberdeen, MD, June

"Multiple Order Morphology-Dependent Resonances Observed in Lasting Droplets"
H.B. Lin, J.D. Eversole, A.J. Campillo
Optical Society of America Annual Meeting, October, Orlando FL

"Resonance Light Scattering in Coated Microspheres"
H.B. Lin, J.D. Eversole, A.J. Campillo
Optical Society of America Annual Meeting, October, Orlando FL

"Pump Replication in Stimulated Raman Scattering"
C.R. Menyuk, G. Hilfer, J.F. Reintjes
Optical Society of America Annual Meeting, October, Orlando, FL

"Ultrafast Shock Induced Uniaxial Strain in a Liquid"
C.D. Merritt, A.L. Huston, B.L. Justus, A.J. Campillo
American Physical Society Topical Conference on Shock Compression of Condensed Matter, August, Albuquerque, NM

"Ultrafast Shock Induced Uniaxial Strain in a Liquid"
C.D. Merritt, A.L. Huston, B.L. Justus, A.J. Campillo
Chemical Physics Letters, **159**, 349-354

"Spatial Holeburning Effects in Distributed Feedback Lasers"
W.S. Rabinovich, B.J. Feldman
IEEE Journal of Quantum Electronics, **25**, 20

"Above Threshold Mode Discrimination in External Reflector and Phase Shifted Distributed Feedback Lasers"
W.S. Rabinovich, B.J. Feldman
IEEE Journal of Quantum Electronics, **25**, 1808-1812

"A Laser Pumped 3m Ho:YAlO₃ Laser"
W.S. Rabinovich, S.R. Bowman, B.J. Feldman
Optical Society of America Annual Meeting, October, Orlando FL

"Model for a Phase Conjugate Distributed Feedback Laser"
W.S. Rabinovich, B.J. Feldman
CLEO/QELS, April, Baltimore MD

"Suppression of Stimulated Raman Threshold with Strong Broadband Stokes Radiation"
J.F. Reintjes, G. Hilfer, C.R. Menyuk
IEEE/LEO's '89, October, Orlando FL

"Pump Replication in Stimulated Raman Scattering using a Cross-Beam Geometry"
J.F. Reintjes, C.R. Menyuk, G. Hilfer
Proceedings of the SPIE, p. 874

"Chemical Reactions in a XeF₂, D₂ Pulsed Chemical Laser"
S.K. Searles, M.J. Winings
LASERS '89, New Orleans LA

"Acoustic Levitation in a Free-Jet Wind Tunnel"
M.E. Seaver, A. Galloway, T.J. Manuccia
Review of Scientific Instruments, **60**, 3452-3459

"Experimental Study of the E-Beam Sustained Xe:Ar Laser"
A. Suda, B.L. Wexler, B.J. Feldman, K.J. Riley
42nd Annual Gaseous Electronics Conference, October, Palo Alto CA

"Measurements of Gain Saturation and Line Competition in an Electron-Beam-Pumped High-Pressure Ar/Xe Laser"
A. Suda, B.L. Wexler, B.J. Feldman, K.J. Riley
Applied Physics Letters, **54**, 1305

"Performance Characteristics of the X-ray Preionized Xe:Ar Laser"

J.E. Tucker, B.L. Wexler, B.J. Feldman, T.L. McClelland

42nd Annual Gaseous Electronics Conference, October, Palo Alto CA

"X-ray Preionized Xe/Ar Laser"

J.E. Tucker, B.L. Wexler, B.J. Feldman
IEEE Photonics Technology Letters, 1, 193-195

"Parametric Study of the X-ray Preionized Ar/Xe Laser"

J.E. Tucker, B.L. Wexler, B.J. Feldman, T.L. McClelland

IEEE/LEO's '89, October, Orlando FL

"Stimulated Brillouin Scattering and Phase Conjugation with a Multiple-Line Hydrogen Fluoride Laser"

W. Whitney, M.T. Duignan, B.J. Feldman

CLEO/QELS '89, April, Baltimore MD

ELECTRO-OPTICAL TECHNOLOGY

"CW Diode Pumped 2.3-Micron Fiber Laser"

R.E. Allen, L. Esterowitz

Applied Physics Letters, 55(8), 721

"Diode Pumped Thulium-Doped Fiber Laser at 2.29 μ m"

R.E. Allen, L. Esterowitz, I.D. Aggarwal
CLEO/QELS '89, Baltimore MD, April

"Multiple Harmonic Conversion of Pulsed CO₂ Laser Radiation"

R.C.Y. Auyeung, D.M. Zielke, B.J. Feldman

Applied Physics B, 48, 293-297

"Far Infrared Magneto-optical Study of Holes and Electrons in Zero-Gap HgTe-CdTe Superlattices"

M. Dobrowolska, T. Wojtowicz, J.K. Fundyna, O.K. Wu, J.R. Meyer, C.A. Hoffman, F.J. Bartoli

American Physical Society, St. Louis MO, March

"Electronic Properties of MBE Grown A-Sn_(1-x)Ge_x Alloys"

M.A. Englehardt, H. Hochst, C.A.

Hoffman, J.R. Meyer, R.J. Wagner, F.J. Bartoli, J. Menendez

American Physical Society, St. Louis MO, March

"Pulsed Laser Emission at 2.3 μ m in a Thulium-Doped Fluorozirconate Fibre"

L. Esterowitz, R.E. Allen, I.D. Aggarwal
Electronics Letters, 24(17), 1104

"Diode Pumped Holmium, Thulium, and Erbium Lasers Between 2 and 3 μ m"

Operating CW at Room Temperature"

L. Esterowitz

Proceedings of the SPIE, Orlando FL, March, 1104, p. 50

"Rare Earth Doped IR Fiber Lasers for Medical Applications"

L. Esterowitz, R.E. Allen

Proceedings of the SPIE, Los Angeles CA, January, pp. 1048-129

"Tunable 2.3 μ m Tm³⁺:LiYF₄ Laser"

L. Esterowitz, R.C. Stoneman

Tunable Solid State Lasers Conference, Cape Cod, MA, April

"Spectra and Energy Levels of

Tm³⁺:Y₃Al₅O₁₂"

J. Gruber, G.J. Quarles, G. Kintz, L.

Esterowitz, M. Hills, R. MacFarlane, C. Morrison, G. Turner

Physical Review B, 40, 9464

"Reactions of First Row Transition Metal Atoms and Small Clusters in Matrices"

R.H. Hauge, J.L. Margrave, Z.H. Kafafi
in *Chemistry and Physics of Matrix*

Isolated Species, M. Moskovits and L.

Andrews, eds., (Elsevier Science Publishers, N. Holland), pp. 277

"Band-Gap Dependent Electron and Hole Transport in P-Type HgTe-CdTe Superlattices"

C.A. Hoffman, J.R. Meyer, F.J. Bartoli

Physical Review B, 39, 15208

"Negative Energy Gap in HgTe-CdTe Heterostructures with Thick Wells"
C.A. Hoffman, J.R. Meyer, F.J. Bartoli
Physical Review B, 40(6), 3867

"Three-Band Transport and Cyclotron Resonance in -Sn and $\text{A-Sn}_{(1-x)}\text{Ge}_x$ by Molecular Beam"
C.A. Hoffman, J.R. Meyer, R.J. Wagner, F.J. Bartoli
Physical Review B, 40, 11693

"The Activation of the C-H Bond of Allene by Ground State Atomic Iron"
Z.H. Kafafi, R.S. Pong
6th International Conference on High Temperatures, Chemistry of Inorganic Materials, NIST, Gaithersburg MD, April

"IR Laser Induced Photo-Orientation of a Metal Water Complex"
Z.H. Kafafi, R.S. Pong, J.S. Shirk
7th Matrix Isolation Spectroscopy Symposium, Noordwykerhout, The Netherlands, July

"Reactions and Photochemistry of Iron with C_3H_4 : C-H Bond Activation of Allene and Methylacetylene"
Z.H. Kafafi, R.S. Pong
7th Matrix Isolation Spectroscopy Symposium, Noordwykerhout, The Netherlands, July

"Polarized IR Spectroscopy of Photo-oriented 2-Fluoroethanol in Solid Argon: Mechanism of the Mode-Specific Isomerization"
Z.H. Kafafi, C.L. Marquardt, J.S. Shirk
Journal of Chemical Physics, 90, 3087

"Non-Resonant Third Order Optical Nonlinearities in Phthalocyanines"
J.R. Lindle, F.J. Bartoli, C.A. Hoffman, Z.H. Kafafi, J.S. Shirk, A.W. Snow
CLEO/QELS '89, Baltimore MD, April

"Nonlinear Optical Properties of Heteroaromatic Ladder Polymers at 1.06 μm "
J.R. Lindle, F.J. Bartoli, C.A. Hoffman, O.K. Kim, J.S. Shirk, Z.H. Kafafi
CLEO/QELS '89, Baltimore MD, April

"Degenerate Four-Wave Mixing in Metallophthalocyanines"
J.R. Lindle, F.J. Bartoli, C.A. Hoffman, Z.H. Kafafi
Joint Optical Society/IEEE LEOS Annual Meeting, Orlando FL, October

"Narrow-Gap II-VI Superlattices: Correlation of Theory with Experiment"
J.R. Meyer
International Conference on Narrow-Gap Semiconductors and Related Materials, Gaithersburg MD, June

"Band-Edge Properties of Hg-Based Superlattices"
J.R. Meyer, C.A. Hoffman, F.J. Bartoli
Journal of Vacuum Science & Technology, A7(2), 404

"Double Hole Cyclotron Resonance in Zero-Gap HgTe-CdTe Superlattices"
J.R. Meyer, R.J. Wagner, F.J. Bartoli, C.A. Hoffman
Physical Review B, 40(2), 1388

"Transport Characterization of HgTe/CdTe Superlattice Band Structure"
J.R. Meyer, C.A. Hoffman, F.J. Bartoli
Superlattices and Microstructures, 5(1), 87

"Site Selective Spectroscopy of Stark Levels in $\text{Tm}^{3+}:\text{Y}_3\text{Al}_5\text{O}_{12}$ "
C. Morrison, G.J. Quarles, L. Esterowitz
CLEO/QELS, Baltimore MD, April

"Under Short Title SOCM (S/SAR)"
M.R. Pauli, F.R. Barone, R.D. Moore, C.L. Marquardt, L. Esterowitz
NRL Formal Report 6973

"High Efficiency 2.09 μm Flashlamp Pumped Laser"
G.J. Quarles, C.L. Marquardt, L. Esterowitz, A. Rosenbaum
Applied Physics Letters, 55(11)

"Differences in Decay Kinetics and Mechanisms of Cr^{3+} Tm^{3+} Energy Transfer Between YSGG and YAG"
G.J. Quarles, C.L. Marquardt, L. Esterowitz
IEEE Lasers and Electro-Optics Society Annual Meeting, Orlando FL, October

"Energy Transfer Studies Between Cr^{3+} and Tm^{3+} in Scandium and Aluminum Garnets"

G.J. Quarles, L. Esterowitz
CLEO/QELS, Baltimore MD, April

"High Efficiency 2.09 μm Laser"

G.J. Quarles, A. Rosenbaum, C.L. Marquardt, L. Esterowitz
Tunable Solid State Lasers Conference, WO3-1, Cape Cod, MA, May, p. 186

"Efficiency Optimization for a Flashlamp-Pumped Room Temperature 2 μm Laser"

A. Rosenbaum, G.J. Quarles, C.L. Marquardt, L. Esterowitz
CLEO/QELS '89, April

"Optically Induced Reorientational Aggregation and the Stability of F^{2+} Color Center Lasers"

I. Schneider, C. Pollock
Optics Letters, 14, 1315

"3-D LMS Filter Techniques for Detection of Moving Targets in Cluttered Backgrounds"

D.A. Scribner, I.B. Schwartz, D.A. Ilg, J.P. Havlicek, M.R. Pauli, G.R. Katz, R.G. Priest
IRIS meeting, February, Orlando FL

"Determination of Effective Masses in N- and P-Type HgTe-CdTe Superlattices by Shubnikov-De Haas"

D.G. Seiler, G.B. Ward, R.J. Justice, R.J. Koestner, M.W. Goodwin, M.A. Kinch, J.R. Meyer
American Physical Society, St. Louis MO, March

"Shubnikov-De Haas Measurements on N-Type and P-Type HgTe-CdTe"

D.G. Seiler, G.B. Ward, R.J. Justice, R.J. Koestner, M.W. Goodwin, M.A. Kinch, J.R. Meyer
Journal of Applied Physics, 66, 303

"Off-Resonant Third Order Optical Non-Linearities of Metal Substituted Phthalocyanines"

J.S. Shirk, J.R. Lindle, F.J. Bartoli, C.A. Hoffman, Z.H. Kafafi, A.W. Snow
Applied Physics Letters, 55(13), 1287

"Persistent IR Spectral Holes in Hydrogen Bonded Polymers"

J.S. Shirk, R.G.S. Pong, A.W. Snow
CLEO/QELS '89, Baltimore MD, April

"Large Third Order Optical Non-Linearities of Metallo-Phthalocyanines at 1.064 μm "

J.S. Shirk, J.R. Lindle, F.J. Bartoli, C.A. Hoffman, Z.H. Kafafi, A.W. Snow
Interdisciplinary Laser Science Conference -V, Stanford CA, August

"Third Order Optical Non-Linearities of Metallo-Phthalocyanines at 1.064 μm "

J.S. Shirk, J.R. Lindle, F.J. Bartoli, C.A. Hoffman, Z.H. Kafafi, A.W. Snow
Joint Optical Society/IEEE LEOS Annual Meeting, Orlando FL, October

"Persistent IR Laser Induced Spectral Holes in Hydrogen Bonded Polymers"

J.S. Shirk, R.G.S. Pong, A.W. Snow
Journal of Chemical Physics, 90, 3380

"Off Resonant Third-Order Optical Nonlinearities of Metal-Substituted Phthalocyanines"

J.S. Shirk, J.R. Lindle, F.J. Bartoli, C.A. Hoffman, Z.H. Kafafi, P.P. Schmidt, C.T. White
Physics Letters A, 138, 51

"Diode Pumped Q-Switched Room Temperature 2 μm Tm^{3+} :YAG Laser"

R.C. Stoneman, L. Esterowitz
CLEO/QELS '89, 1, p. 54, April

"Diode Pumped Er:LiYF₄ CW Lasers to 2.8 μm with 10% Slope Efficiency"

R.C. Stoneman, L. Esterowitz
Proceedings of the SPIE, Los Angeles CA, January, pp. 1040-99

"Room Temperature CW Tm^{3+} :YAG and Tm^{3+} :YSGG Lasers Continuously Tunable over the Range 1.86 to 2.14 μm "

R.C. Stoneman, L. Esterowitz
Tunable Solid State Lasers Conference, Cape Cod, MA, April

"Magneto-Optical Properties of a Small Gap HgTe/CdTe Superlattice"
R.J. Wagner, J.M. Perez, J.R. Meyer,
J.W. Han, J.W. Cook, J.F. Schetzina
Journal of Vacuum Science & Technology,
A7(2), 411

"Novel FIR Nonlinear Optical Materials"
E.R. Youngdale, C.A. Hoffman, J.R.
Meyer, F.J. Bartoli, X. Chu, J.P. Faurie,
J.W. Han, J.W. Cook, J.F. Schetzina,
N.A. Engelhardt, E.W. Niles, H. Hochst
International Conference on Narrow-Gap
Semiconductors and Related Materials,
Gaithersburg MD, June

"Nonlinear Optical Coefficients of
Narrow-Gap Semiconductors"
E.R. Youngdale, C.A. Hoffman, J.R.
Meyer, F.J. Bartoli, J.W. Han, J.W. Cook,
J.F. Schetzina, N.A. Engelhardt, W.W.
Niles, H. Hochst
Journal of Vacuum Science & Technology,
A7, 365

"Nonlinear Optical Properties of N and
Sn_(1-x)Ge_x Alloys"
E.R. Youngdale, C.A. Hoffman, J.R.
Meyer, F.J. Bartoli, N.A. Engelhardt,
W.W. Niles
CLEO/QELS, Baltimore MD, April

OPTICAL TECHNOLOGY

"Analysis of Excess Baseband Noise in
Interferometric Sensors due to Down-
Conversion of High Frequency Phase-
Noise by Phase-Carrier Homodyning"
T.A. Berkoff, A.D. Kersey, A. Dandridge
Fiber Optic and Laser Sensors VII, Boston
MA

"Interferometric Displacement Sensing by
Visibility Modulation"
T.A. Berkoff, A.D. Kersey
OFS '89, Paris, France, September

"Mixing & Detection of RF Signals in a
Fiber Optic Magnetostrictive Sensor"
F. Bucholtz, D.M. Dagenais, K.P. Koo
Electronics Letters, 25(19), 1285

"Multiplexing of Nonlinear Fiber Optic
Interferometric Sensors"
F. Bucholtz, A.D. Kersey, A. Dandridge
Journal of Lightwave Technology, 7(3)

"Fiber Interferometric Sensors:
Technology and Applications"
F. Bucholtz, A.M. Yurek
Optics News, November, 20-27

"Interrogation of an Integrated Optic
Modulator over a Low-Birefringence Fiber
using Polarization Tracking"
C.H. Bulmer, A.D. Kersey, M. Davies
IEEE Photonics Technology Letters, 2, 35

"Analytic Output Expression for Integrated
Optic Phase Reversal Modulators with
Microwaved Loss"
W.K. Burns
Applied Optics, 28, 3280

"Voltage-Length Product for Modal
Evolution Type Digital Switches"
W.K. Burns
IGWO '89 Integrated & Guided Wave
Optics Conference, Houston TX, February

"Fiber Superfluorescent Sources for Fiber
Gyro Applications"
W.K. Burns, I.N. Duling III, L. Goldberg,
R.P. Moeller, C. Villarruel, E. Snitzer, H.
Po
OFS '89, Paris, France, September

"Response to a Comment by Gomes and
Araujo on Visible Wavelength Amplified
Spontaneous Emission in a Neodymium-
Doped Optical Fiber Pumped at 1064nm"
T.F. Carruthers, I.N. Duling III, E.J.
Friebele, C.M. Shaw
Applied Physics B

"Visible Wavelength Amplified
Spontaneous Emission in a Neodymium-
Doped Optical Fiber Pumped at 1064nm"
T.F. Carruthers, I.N. Duling III, C.M.
Shaw, E.J. Friebele
Applied Physics Letters, 54(10)

"Amplified Spontaneous Emission at Visible Wavelengths in an Infrared Pumped Neodymium Doped Optical Fiber"
T.F. Carruthers, I.N. Duling III, E.J. Friebele
CLEO/QELS '89, April, Baltimore MD

"Near-Infrared Continuum Generation in an Optical Fiber"
T.F. Carruthers, C.M. Shaw, C.G. Askins, E.J. Friebele
Optical Society of America Annual Meeting, Orlando FL, October

"Near-Infrared Continuum Generation in an Optical Fiber"
T.F. Carruthers, C.M. Shaw, C.G. Askins, E.J. Friebele
CLEO/QELS '89, Baltimore MD, April

"Efficient Frequency Doubling of GaAlAs Laser Diode Array Emission in Monolithic KNbO₃ Cavity"
M.K. Chun, L. Goldberg
CLEO/QELS '89, Baltimore MD, April

"Resonant Optical Frequency Doubling of Injection-Locked GaAlAs Array Output using KNbO₃"
M.K. Chun, L. Goldberg
Optical Society of America Annual Meeting, Orlando FL, October

"Injection Beam Parameter Optimization of Injection Locked Diode Laser Array"
M.K. Chun, L. Goldberg, J.F. Weller
Optics Letters, 14(5)

"Detection of Low-Frequency Magnetic Signals in a Magnetostrictive Fiber Optic Sensor with Suppressed Residual Signal"
D.M. Dagenais, F. Bucholtz, K.P. Koo, A. Dandridge
Journal of Lightwave Technology, 7(6), 881-887

"Heterodyne Detection of Magnetic Fields from 0.1 Hz to 10 MHz in a Magnetostrictive Fiber Sensor"
D.M. Dagenais, F. Bucholtz, K.P. Koo
OFS '89, Paris, France, September

"Distributed and Multiplexed Optical Fiber Sensing: Principles and Applications"
A. Dandridge, A.D. Kersey
7th International Conference on Fiber Optics & Optoelectronics, London, April

"Fiber Optic Sensors"
A. Dandridge, A.D. Kersey
AIChE, San Francisco CA, November

"Use of a Singlemode/Multimode Fiber Power Recombiner in Multiplexed Fiber Sensor Arrays: Power Budget and Noise Considerations"
A. Dandridge, A.D. Kersey, A.B. Tveten, A.M. Yurek
FOC/LAN Conference, San Francisco CA., November

"Frequency Division Multiplexing of Interferometric Sensor Arrays"
A. Dandridge, A.B. Tveten, A.M. Yurek, A.D. Kersey, E.C. McGarry
NRL Memorandum Report 6457

"Test Report of February 1987-Tow Cable Tow Test (U)"
A. Dandridge, A.B. Tveten, A.M. Yurek
NRL Memorandum Report 6489

"Increasing Multiplexed Fiber Sensor Array Performance by Use of a Singlemode/Multimode Recombiner"
A. Dandridge, A.D. Kersey, A.B. Tveten, A.M. Yurek
OFS '89, Paris, France, September

"Characterization of 3x3 Fiber Couplers for Passive Homodyne Systems: Polarization and Temperature Sensitivity"
M.A. Davis, A.D. Kersey, M.J. Marrone, A. Dandridge
Proceedings of the OFC '89, Houston TX, February

"High Power Diode-Pumped Superluminescent Fiber Source"
I.N. Duling III, L. Goldberg, W.K. Burns
CLEO/QELS '89, April, Baltimore MD

"Optical Phase Control of an Optically Injection Locked Microwave Oscillator"
R.D. Esman, L. Goldberg, J.F. Weller
IEEE Transactions on Microwave Theory and Techniques, 37(10), 1512-1518

"A 16.7 GHz Hybrid Optical Receiver"
R.D. Esman, C. Rauscher
International Conference on Integrated
Optics & Optical Fiber Communication,
Japan, July

**"Using Direct Modulation and an All-
Fiber Interferometer to Measure Laser
Diode Spectral Linewidth"**
R.D. Esman, L. Goldberg
OFC Technical Digest, Paper WQ18, OFC
'89, Houston TX, February

**"A Comparison of the Radiation
Vulnerabilities of Ring Resonator and
Interferometric Fiber Optic Gyroscopes"**
N.J. Frigo
Journal of Lightwave Technology, 7(12),
2009-2012

**"Efficient Generation at 421nm by
Resonantly Enhanced Doubling of GaAlAs
Laser Diode Array Emission"**
L. Goldberg, M.K. Chun
Applied Physics Letters, 55, 3

**"Diffraction Limited Broad Stripe Laser
Emission in an External Resonator"**
L. Goldberg, J.F. Weller, M.K. Chun
CLEO/QELS '89, April, Baltimore MD

**"Narrow Lobe Emission of High Power
Broad Stripe Laser in an External
Resonator Cavity"**
L. Goldberg, J.F. Weller
Electronics Letters, 25(2), 112

"Applications of Fiber Optic Sensing"
A.D. Kersey, A. Dandridge
39th Electronic Components Conference,
Houston TX, May

**"Differential Polarimetric Fiber Optic
Sensor Configuration with Dual
Wavelength Operation"**
A.D. Kersey, M.A. Davis, M.J. Marrone
Applied Optics, 28

**"Fiber Optic Sensors for
Industrial/Engineering Applications"**
A.D. Kersey, A. Dandridge
Chemical Processing, November, 24

**"Adaptive Polarization Diversity
Detection: Application to Coherent
Communications and Interferometric
Fiber Sensors"**
A.D. Kersey, M.J. Marrone, A. Dandridge
ECOC '89, Gothenburg, Sweden, September

**"Multiplexed Mach-Zehnder Ladder-Array
with Ten Sensor Elements"**
A.D. Kersey, A. Dandridge
Electronics Letters, 25(19), 1298

**"Adaptive Polarization Diversity Receiver
Configuration for Coherent
Communications"**
A.D. Kersey, M.J. Marrone, A. Dandridge
Electronics Letters, 25(4)

**"Comparative Analysis of Multiplexing
Techniques for Interferometric Fiber
Sensors"**
A.D. Kersey, A. Dandridge
Fiber Optics '89, London, England, Apr,
Proceedings of the SIRA/SPIE, 11, p. 1120

**"Transmissive Serial Interferometric
Fiber Sensor Array"**
A.D. Kersey, A. Dandridge, K. Dorsey
Journal of Lightwave Technology, 7(5)

**"Ten-Element Time-Division Multiplexed
Interferometric Fiber Sensor Array"**
A.D. Kersey, A. Dandridge
OFS '89, Paris, France, September

**"All-Fiber Faraday-Rotation Current
Sensor with Remote Laser-FM Based
Heterodyne Detection"**
A.D. Kersey, M.A. Davis
OFS '89, Paris, France, September

**"Characterization of a Diode Laser Pumped
Nd:YAG Ring Laser for Fiber Sensor
Applications"**
A.D. Kersey, K.J. Williams, A.
Dandridge, J.F. Weller
OFS '89, Paris, France, September

**"Demonstration of Lead Sensitivity of a
Fiber Interferometer due to Magneto-
Optically Induced Input Polarization
Fluctuation"**
A.D. Kersey, M.J. Marrone, A. Dandridge
OFS '89, Paris, France, September

"Use of a Novel Singlemode/Multimode Fiber Power Recombiner in Multiplexed Fiber Sensor Arrays"

A.D. Kersey, A. Dandridge, A.D. Kersey, A.B. Tveten, A.M. Yurek
OFS '89, Paris, France, September

"Applications for Fiber Optic Sensors"

A.D. Kersey
Optical Society of America Annual Meeting, Orlando FL, October

"Measurement of Crosstalk in a Fiber Optic Faraday Perot Sensor Array with Ring Reflectors"

A.D. Kersey, K. Dorsey, A. Dandridge
Optics Letters, 14, 93

"Fiber Optic Gyroscope Technology"

A.D. Kersey, A. Dandridge, W.K. Burns
Optics News, November, 12-19

"Remote Interrogation of an Integrated Optic Modulator using a Low-Birefringence Fiber Link and Feedback-Control of Polarization"

A.D. Kersey, C.H. Bulmer, M.A. Davis
Proceedings of the OFC '89, Houston TX, February, p. 137

"Fiber Sensor Devices and Applications"

A.D. Kersey
Proceedings of the OFC '89, Houston TX, February, p. 249

"A Compact Fiber-Optic Magnetometer Employing an Amorphous Metal Wire Transducer"

K.P. Koo, D.M. Dagenais, F. Bucholtz, A. Dandridge
IEEE Photonics Technology Letters, 12, 464-466

"A Modified Coherent Rotation Model for Fiber-Optic Magnetometers using Magnetostrictive Transducers"

K.P. Koo, D.M. Dagenais, F. Bucholtz, A. Dandridge
Proceedings of the SPIE /Fiber Lase '89, Boston MA, September

"Response Time of Fiber Optic Temperature and Pressure Sensors in the All Optical Towed Array"

M.J. Marrone, A.D. Kersey, A. Dandridge
NRL Memorandum Report 6570

"Quasi-Distributed Fiber Optic Sensor System with Subcarrier Filtering"

M.J. Marrone, A.D. Kersey, A. Dandridge, C. Wade
OFS '89, Paris, France, September

"Synchronized Polarization Sampling Technique for Compensation of Signal Fading in Fiber Interferometers"

M.J. Marrone, A.D. Kersey
Proceedings of the OFC '89, Houston TX, February, p. 146

"Open Loop Output and Scale Factor Stability in a Fiber Optic Gyroscope"

R.P. Moeller, W.K. Burns, N.J. Frigo
Journal of Lightwave Technology, 7(2)

"Coherence Multiplexed Fiber Optic Temperature Sensor using a Wavelength Dithered Source"

D. O'Connell, A.D. Kersey, C. Wade, A. Dandridge
Proceedings of the OFC '89, Houston TX, February, p. 145

"GaAs PIN Photodiodes Made by Metalorganic Chemical Vapor Deposition using Tertiarybutylarsine and Arsine"

H. Serreze, J. Baumann, L. Bunz, R. Schacter, R.D. Esman
Applied Physics Letters, 55, pp. 2532-34

"Theoretical & Experimental Investigation of 1x2 Digital Switches"

L. Thylen, P. Svensson, B. Lagerstrom, B. Stoltz, W.K. Burns
15th European Conference on Optical Communication, September, Gothenburg, Sweden

"Beam Propagation Method Analysis of the Digital Switch"

L. Thylen, P. Svensson, W.K. Burns
IGWO '89 Integrated & Guided Wave Optics Conference, Houston TX, February

"Fiber-Optic Delay Lines for Broad-Band Signal Processing"

C.C. Wang, W.K. Burns
39th Electronic Components Conference, Houston TX, May

"Navy Applications of Fiber Optics"
J.F. Weller
Navy Metrology Research & Development
Conference, Corona, CA, April

"Military Applications of Fiber Optics"
J.F. Weller
OFC '89, Houston TX, February

"Interferometric Measurement of Low-Frequency Phase Noise Characteristics of a Diode Laser-Pumped Nd:YAG Ring Laser"
K.J. Williams, A. Dandridge, A.D. Kersey, J.F. Weller, A.M. Yurek
Electronics Letters, 25(12), 774

"Phase Noise Characteristics of a Diode Laser Pumped Nd:YAG Ring Laser"
K.J. Williams, A.D. Kersey, A. Dandridge, J.F. Weller, A.M. Yurek, A.B. Tveten
Electronics Letters, 25(12), 774-776

"6-34 GHz Offset Phase Locking of Nd:YAG 1319-Nm Nonplanar Ring Lasers"

K.J. Williams, L. Goldberg, R.D. Esman, M. Dagenais, J.F. Weller
Electronics Letters, 25(18)

"Active Offset Phase Locking of Nd:YAG 1319-Nm Nonplanar Ring Lasers to 34 GHz"

K.J. Williams, R.D. Esman, L. Goldberg, M. Dagenais, J.F. Weller
IOOC '89, Kobe, Japan, July

"1.3m Operation of a Coherence Multiplexed Interferometric Sensor"
A.M. Yurek, A.B. Tveten, A. Dandridge, A.D. Kersey
OFS '89, Paris, France, September

MICRO AND NANOELECTRONICS PROCESSING

"Characterization of Thin Boron-doped Silicon Membranes by Double-crystal X-ray Topography"
D.I. Ma, S.B. Qadri, M.C. Peckerar, M.E. Twigg
Journal of Vacuum Science & Technology, B7(6), 1594-1598

THEORETICAL RESEARCH

"New Interpretation of Activation Enthalpies for Electrical Conductivity and Nuclear Spin Relaxation in Glassy Ionic Conductors"
G. Balzer-Jollenbeck, H. Jain, K.L. Ngai
Physical Review B, 39(9), 6071-6075

"A Neural Net Approach to Discrete Hartley and Fourier Transforms"
A.D. Culhane, M.C. Peckerar, C.R.K. Marrian
IEEE Transactions on Circuits and Systems, 36(5), 695-703

"Comment on 'Relation Between Stretched-Exponential Relaxation and Vogel-Fulcher Behavior above the Glass Transition'"

K.L. Ngai, R.W. Rendell, A.K. Rajagopal, S. Teitler
Journal of Chemical Physics, 91(12), 8002-8003

"Comments on 'Brillouin Scattering Studies of Structural Relaxations in Poly(Propylene Glycol)'"
K.L. Ngai, R.W. Rendell, C.H. Wang
Journal of Polymer Science C: Polymer Letters, 30, 369-370

"Melt Viscosity, Structural Relaxation and Structure of Fluorozirconate Glasses"
K.L. Ngai, J.A. Freitas, U. Strom
Materials Science Forum, **32-33**, 577-582

"Correlation Between the Activation Enthalpy and Kohlrausch Exponent for Ionic Conductivity in Alkali Aluminogermanate Glasses"
K.L. Ngai, J.N. Mundy, H. Jain, O. Kanert, G. Balzer-Jollenbeck
Physical Review B, **39**(9), 6169-6179

"Correlation Between the Activation Enthalpy and Kohlrausch Exponent for Ionic Conductivity in Oxide Glasses"
K.L. Ngai, S.W. Martin
Physical Review B, **40**(15), 10550-10556

SOLID STATE DEVICES

"Simulation of Hot-Carrier Degraded Mosfets"
M.G. Ancona, N.S. Saks
6th International NASECODE Conference, pp. 415-421

"Quantum Correction to the Equation of State of an Electron Gas in a Semiconductor"
M.G. Ancona, G.J. Iafrate
Physical Review B, **39**(13), 39

"Investigation of the Charge Pumping Current in Metal-Oxide-Semiconductor Structures"
G. Ghibaudo, N.S. Saks
Journal of Applied Physics, **65**(11), 4311

"Single-Crystal Germanium Grown on (1102) Sapphire by Molecular Beam Epitaxy"
D.J. Godbey, S.B. Qadri, M.E. Twigg, E.D. Richmond
Applied Physics Letters, **54**(24), 2449-2451

"A Si_{0.7}Ge_{0.3} Strained Layer Etched Stop for the Generation of Bond and Etch Back SOI"
D.J. Godbey, M.E. Twigg, H.L. Hughes, L.J. Palkuti, P. Leonov, J.J. Wang
IEEE SOS/SOI Technology Conference, p. 143

"Coupling Model Analysis of the Tracer Diffusion of Linear and Star Polymers in Semidilute and Concentrated Solutions"
K.L. Ngai, T.P. Lodge
Polymer Preprints, **30**(1), 67-68

"Analysis and Interpretation of Chain Normal Modes and Segmental Mode Dielectric Data in Entangled cis-Polyisoprene*"
K.L. Ngai, R.W. Rendell
Polymer Preprints, **30**(1), 89-90

"Historical Perspective"
H.L. Hughes
in *Ionizing Radiation Effects in MOS Devices and Circuits*, p. 47

"GaAs/GaAlAs/GaAs Heterojunction Photoconductor Array for Programmable Frequency Excision and Adaptive Filtering"
F.J. Kub, G.W. Anderson, N.A. Papanicolaou, J.A. Modolo, R.L. Grant, D.E. Brown
Proceedings of the SPIE, 1102, p. 193

"Programmable Vector-Matrix Multiplier for Artificial Neural Networks"
F.J. Kub, K.K. Moon, I.A. Mack
Symposium on VLSI Circuitry, Kyoto, Japan, pp. 97-98

"Calculation of Trap Assisted Tunnel Current in Field Induced Junctions on LW HgCdTe"
J.P. Omaggio
Proceedings of the IRIS IR Detector Specialty Meeting, Summer, II, p. 237

"Further Investigation of Interface Trap Formation via the Two-Sage H⁺ Process"
N.S. Saks, D.B. Brown
IEEE Transactions on Nuclear Science, **36**(6), 1848

"Geometric Components of Charge Pumping Current in SOS Devices"
R.E. Stahlbush, R.K. Lawrence, W. Richards
IEEE Transactions on Nuclear Science, 36(6), 1998-2005

"Elimination of Microtwins in Silicon Grown on Sapphire by Molecular Beam Epitaxy"
M.E. Twigg, E.D. Richmond, J.G. Pellegrino
Applied Physics Letters, 54(18), 1766-1768

"Radiation Induced Interface Trap Limited Storage Times in 10 μ m Cutoff Wavelength (Hg,Cd)Te MIS Capacitors"
J.R. Waterman
IEEE Transactions on Nuclear Science, 35(6), 1313

"Magnetic Field Effects on Trap-Assisted Tunneling in Hg_{0.78}Cd_{0.22}Te Metal-Insulator Semiconductor Capacitors"
J.R. Waterman, R.J. Wagner, J.M. Perez
Journal of Vacuum Science & Technology, A7(2), 381

ELECTRONIC MATERIALS

"Donor Identification in Thin Film Cubic SiC"
S.G. Bishop, J.A. Freitas, T.A. Kennedy, W.E. Carlos, W.J. Moore, P.E.R. Nordquist
Springer Proceedings in Physics, Amorphous and Crystalline Silicon Carbide and Related Materials, 34, p. 90

"Photoluminescence Imaging of Spatial Distribution of Recombination Centers in Cubic SiC"
S.G. Bishop, J.A. Freitas, P.E.R. Nordquist, M.L. Gipe
Springer Proceedings in Physics, Amorphous and Crystalline Silicon Carbide and Related Materials-II, 43, p. 112

"Nonlinear Optical Response of Granular Y-Ba-Cu-O Films"
J.C. Culbertson, U. Strom, S.A. Wolf, P.R. Skeath, E.J. West, W.K. Burns
Physical Review B, 39(16), 12359

"Molecular Beam Epitaxy Growth of InSb Films on GaAs"
J.L. Davis, P.E. Thompson
Applied Physics Letters, 54(22), 2235

"Light Scattering Study of ZBLAN Glass Fibers Under Tensile Stress"
J.A. Freitas, P.C. Pureza, W.I. Roberts Jr., U. Strom, I.D. Aggarwal
Materials Science Forum, 32-33, 477-482

"New Deep Acceptor in Epitaxial Cubic SiC"
J.A. Freitas, S.G. Bishop
Applied Physics Letters, 55, 2757

"Quantitative Analysis of Rare Earth Photoluminescence in Fluorozirconate Glasses"
J.A. Freitas, U. Strom, C.F. Fisher, R.G. Ginther
Materials Science Forum, 32-33, 537-542

"Time-Resolved Photoluminescence Studies of Undoped and Al-Doped Cubic SiC"
J.A. Freitas, S.G. Bishop, P. Klein, P.E.R. Nordquist, M.L. Gipe
Springer Proceedings in Physics, Amorphous and Crystalline Silicon Carbide and Related Materials II, 43, pp. 106-110

"The Fractional Quantum Hall Effect with an Added Parallel Magnetic Field"
J.E. Furneaux, D.A. Syphers, A.G. Swanson
Physical Review Letters, 63(10), 1098

"The Fractional Quantum Hall Effect with an Added Parallel Magnetic Field"
J.E. Furneaux, D.A. Syphers, A.G. Swanson
Springer Proceedings in High Magnetic Fields in Semiconductor Physics-II, 87, p. 143

"Plasmons and Phonons Bound to Neutral Donors in Semiconductor Quantum-Well Structures"

D.G. Gammon, B.V. Shanabrook, D. Musser

Physical Review B, **39**(2), 1415-1418

"Resonant Raman Scattering Study of Localized Collective Excitons"

D.G. Gammon, B.V. Shanabrook, D. Musser

Superlattices and Microstructures, **6**(2), 171-174

"Optically Detected Magnetic Resonance Study of Si Donors in Hetero-Epitaxial Layers of $\text{Al}_x\text{Ga}_{(1-x)}\text{As}$ on GaAs"

E.R. Glaser, T.A. Kennedy, B. Molnar
Institute of Physics Conference, Bath, England, **95**(4), pp. 233-242

"Symmetry of the Si Shallow Donor State in AlAs/GaAs and $\text{Al}_x\text{Ga}_{(1-x)}\text{As}/\text{GaAs}$ Heterostructures"

E.R. Glaser, T.A. Kennedy, R.S. Sillmon
Physical Review B, **40**(5), 3447

"Electronic Properties of Stoichiometric Ba and O Overlayers Adsorbed on W(001)"

L.A. Hemstreet, S.R. Chubb, W.E. Pickett
Physical Review B, **40**(6), 3592

"Thin Film Growth of Oxide Superconductor Materials"

R.L. Henry, E.J. Cukauskas, S.B. Qadri, A.H. Singer, G.J. Campisi
IEEE Transactions on Magnetics, **25**, 2351-2355

"Numerical Simulation of Transient Response and Resonant-Tunneling Characteristics of Double-Barrier Semiconductor Structures as a Function of Experimental Parameters"

K.L. Jensen, F.A. Buot
Journal of Applied Physics, **65**(12), 5248

"Particle Trajectory Tunneling: A Novel Approach to Quantum Transport"

K.L. Jensen, F.A. Buot
Institute of Physics Conference, Bath, England, **99**(5), pp. 137-140

"The Formation of Subgrain Boundaries in GaAs Single Crystals"

H. Lessoff, R.J. Gorman

Journal of Electronic Materials, **18**(3), 407-410

"Semiempirical Construction of LCAO Parameters for II-VI Compound Semiconductors"

Y. Li, P.J. Lin-Chung

Physica Status Solidi, **153**, 21

"Electronic Structures of Native Complex Defects in GaP and InP"

P.J. Lin-Chung

Defects and Diffusion Forum, **62/63**, 161-166

"Metastable Defects in Be-Doped $\text{Al}_x\text{Ga}_{(1-x)}\text{As}$ "

R. Magno, R.N. Shelby, T.A. Kennedy, M.G. Spencer

Journal of Applied Physics, **65**(12), 4828

"A Eutectic Hydroxide Etch for $\beta\text{-SiC}$ "

P.E.R. Nordquist, H. Lessoff, R.J. Gorman, M.L. Gipe

Materials Letters, **7**(9,10), 316-317

"Antiphase Domains and Etching of $\beta\text{-SiC}$ "

P.E.R. Nordquist, M. Gipe, G. Kelner, P. Klein, R.J. Gorman

Materials Letters, **9**(1), 17-20

"Crystalline Defects in $\beta\text{-SiC}$ as Revealed by a NaOH-KOH Eutectic Etch"

P.E.R. Nordquist, H. Lessoff, R.J. Gorman, M.L. Gipe

Springer Proceedings in Physics, Amorphous and Crystalline Silicon Carbide and Related Materials -II, **43**, pp. 119-124

"Morphology and Growth Rate of $\beta\text{-SiC}$ Grown on (100) Silicon by Chemical Vapor Deposition"

P.E.R. Nordquist, G. Kelner, M.L. Gipe, P. Klein

Materials Letters, **8**(6,7), 209-211

"Fe-Implantation in $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}/\text{InP}$ "

M.V. Rao, N.R. Keshavarznia, D.S. Simons, P.E. Thompson, T.Y. Chang, J.M. Kuo

Journal of Applied Physics, **65**, 481-485

"Halogen Lamp Rapid Thermal Annealing of Si- and Be-Implanted $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}$ "

M.V. Rao, S.M. Gulwadi, P.E. Thompson, A. Fathimulla, O.A. Aina
Journal of Electronic Materials, **18**, 131-136

"Phonon-Assisted Optical Absorption by Excitations in Semiconductor Quantum Wells"

S. Rudin, T.L. Reinecke
Physical Review B, **39**(12), 8488

"Hole Intersubband Transitions in GaAs/AlGaAs Multiple Quantum Wells. A New Method for Determining the Luttinger Parameters"

B.V. Shanabrook, O.J. Glembocki, D.A. Broido, W.I. Wang
Superlattices and Microstructures, **5**(4), 503-505

"Luttinger Parameters for GaAs Determined from the Intersubband Transitions in GaAs/Al_xGa_(1-x)As Multiple Quantum Wells"

B.V. Shanabrook, O.J. Glembocki, D.A. Broido, W.I. Wang
Physical Review B, **39**(5), 3411-3414

"OMVPE Growth of p-AlGaAs/GaAs Heterojunctions Using Diethylberyllium"
R.S. Sillmon, S.M. Hues, D.K. Gaskill, N. Bottka, P.E. Thompson
Journal of Electronic Materials, **18**, 501

"Efficient Light Emission by Impact Ionization in Single-Barrier Tunneling Devices"

E.S. Snow, S.W. Kirchoefer, P.M. Campbell, A.J. Glembocki
Applied Physics Letters, **54**(21)

"Spectrally Dependent Photocurrent Measurements in n^+-n-n^+ "

E.S. Snow, S.W. Kirchoefer, A.J. Glembocki
Applied Physics Letters, **54**(20), 2023

"Far Infrared Photoresponse of Two-Dimensional Granular $\text{YBa}_2\text{Cu}_3\text{O}_{(7-x)}$ Films"

U. Strom, J.C. Culbertson, S.A. Wolf
Proceedings of the SPIE, 1187, Processing of Films for High T_c Superconducting Electronics, p. 290

"Light Detection with Granular Superconducting Films"

U. Strom, J.C. Culbertson, S.A. Wolf
NRL Review

"Photoconductive Response of Granular Superconducting Films"

U. Strom, E.S. Snow, R.L. Henry, P.R. Broussard, J.H. Claassen, S.A. Wolf, M.T. Leung, R.W. Simon
IEEE Transactions on Magnetics, **25**, pp. 1315-1318

"Atomic and Carrier Profiles of 1, 2, 4, and 6 MeV ^{30}Si Implanted into GaAs"

P.E. Thompson, R.G. Wilson, D.C. Ingram, P.P. Pronko
Journal of Applied Physics, **65**, 2986-2990

"Atomic Profiles and Electrical Characteristics of Very High Energy (8-20 MeV) Si Implants in GaAs"

P.E. Thompson, H.B. Dietrich, J.M. Eridon, T. Gresco
Materials Research Society Symposium Proceedings, **128**, pp. 665-669

"Phonon-Mediated Indirect Interactions Between Adatoms on Surfaces"

S.C. Tiersten, T.L. Reinecke, S.C. Ying
Physical Review B, **39**(17)

SURFACE AND INTERFACE SCIENCES

"Photoemission Study of Oxygen Adsorption on (001) Silicon Carbide Surfaces"

V.M. Bermudez
Journal of Applied Physics, **66**, 6084-6092

"Adsorption of Chlorine on Clean and on Oxygen Pre-Exposed Al(111)"

V.M. Bermudez, A.S. Glass
Journal of Vacuum Science & Technology, **A7**(3), 9161-1966

"Infrared Spectroscopic Study of Cl_2/O_2 CO-Adsorption on Al(111)"

V.M. Bermudez, A.S. Glass
Langmuir, 5, 316-318

"Defect Structure of $\text{In}_x\text{Ga}_{(1-x)}\text{As}/\text{GaAs}$ Grown on Misoriented (100) Silicon by Molecular Beam Epitaxy"

A. Christou, N. Flevaris, A. Georgakilas, A.A. Iliadis
Materials Letters, 8(3,4), 109-111

"Reliability Problems in State-of-the-Art GaAs Devices and Circuits"

A. Christou
Quality and Reliability Engineering International, 5, 37-45

"Temperature Dependent Effects and Catastrophic Burnout of the Integrated Series IMPATT Structure (ISIS) Diodes"

A. Christou, N.A. Papanicolaou, H. Grubin, G. Halkias
Solid State Electronics, 32(10), 89

"Lateral Resolution of Si Diffusion Induced Disorder of Superlattices"

E.A. Dobisz, C.R.K. Marrian, H.G. Craighead, S.A. Schwarz, P. Harbison
Journal of Vacuum Science & Technology, B7(6), 2053-2056

"Implant Damage in AlGaAs Based Superlattices & Alloys at 77K"

E.A. Dobisz, H.B. Dietrich, A.W. McCormick, J.P. Harlison
Materials Research Society Symposium Proceedings, 147, p. 285

"A High-Resolution Double-Crystal Diffractometer Method for the Measurement of Lattice Parameter in Single Crystals"

M. Fatemi
Journal of Crystal Growth, 316-326

"Initial Stages of Growth of GaAs on Silicon (211) Substrates by Migration-enhanced Molecular Beam Epitax"

L. Fotiadis, R. Kaplan
Applied Physics Letters, 55(11), 2538-2540

"Growth of $\text{In}_x\text{Ga}_{(1-x)}\text{As}$ on Silicon by Molecular Beam Epitaxy"

A. Georgakilas, A.A. Iliadis, A. Christou
Materials Letters, 7(12), 456-460

"Electromodulation Spectroscopy of Confined Systems"

O.J. Glembocki, B.V. Shanabrook
Superlattices and Microstructures, 5(4), 603

"Neutron Scattering from Charged Spinless Paired Boson Superconductor"

W. Jin, S.D. Mahanti, A.K. Rajagopal
Solid State Communications, 71(11), 967-971

"Surface Structures of -SiC, 6H-SiC and Pseudomorphic Si Adlayers"

R. Kaplan
Springer Proceedings in Physics, Amorphous and Crystalline Silicon Carbide and Related Materials, 34, pp. 100-106

"Resonant Excitation of an Oxygen Valence Satellite in Photoemission from High- T_c Superconductors"

R.L. Kurtz, S.W. Robey, R.L. Stockbauer, D. Mueller, A. Shih, L.E. Toth
Physical Review B, 39(7), 4768-4771

"Electronic 'Neural' Net Algorithm for Maximum Entropy Solutions of Ill-Posed Problems"

C.R.K. Marrian, M.C. Peckerar
IEEE Transactions on Circuits and Systems, 36, 288

"The Operation of Coated Tungsten Based Dispenser Cathodes in Non-Ideal Vacuum"

C.R.K. Marrian, A. Shih
IEEE Transactions on Electron Devices, 36, 173-179

"Electronic 'Neural' Nets for Solving Ill-Posed Problems with an Entropy Regulariser"

C.R.K. Marrian, M.C. Peckerar, I.A. Mack, Y.C. Pati
in *Maximum Entropy and Bayesian Method*, J. Skilling, ed., pp. 371-376

"High Temperature Metallisation for GaAs Device Processing"

D.V. Morgan, H. Thomas, W.T. Anderson, P.E. Thompson, A. Christou, D.J. Kiskett
Physica Status Solidi, 110, 531

"Pt and PtSi_x Schottky Contacts on n-Type -SiC"

N.W. Papanicolaou, A. Christou, M.L. Gipe

Journal of Applied Physics, **65**(9), 3526

"The Mechanism of Epitaxial Si_(1-x)Ge_x Film Formation Produced by the Oxidation of Amorphous SiGe Layers Deposited on Si(100)"

S.M. Prokes, W.F. Tseng, A. Christou
Materials Research Society Symposium
Proceedings, **18**, p. 243

"Maximum Entropy and Poissonian Characterization of the Quantized Radiation Field"

A.K. Rajagopal, P.J. Lin-Chung, S. Teitler

Nuclear Physics B, **6**, 318-320

"Production of Number States of the Electromagnetic Field"

A.K. Rajagopal, F.W. Cummings
Physical Review A, **39**, 3414-3416

"Minimum Uncertainty Products from the Principle of Maximum Entropy"

A.K. Rajagopal, S. Teitler

Physical Review A, **40**(2), 515-518

"Microscopic and Macroscopic Conjunction at Minimum Uncertainty"

A.K. Rajagopal, S. Teitler

Physics Letters A, **137**(7,8), 339-341

"Bivariate Averaging and the Wigner Distribution Function"

A.K. Rajagopal, S. Teitler

Pramana, **33**(3), 347-358

"Neutron Scattering from Fermion and Boson Superconductors"

A.K. Rajagopal, W. Jin, S.D. Mahanti
Proceedings of the International

Conference on Materials and Mechanisms
of Superconductivity -High Temperature
Superconductivity, **162-164**, pp. 247-248

"Neutron Scattering as a Probe of Superconducting Correlations in the New High T_c Superconductors"

A.K. Rajagopal, S.D. Mahanti, W. Jin

Solid State Communications, **69**(8), 847-849

"Synchrotron Radiation Studies for Thermionic Cathode Research"

A. Shih, D. Mueller, L.A. Hemstreet

IEEE Transactions on Electron Devices,
36, 194-200

VACUUM ELECTRONICS

"Linear Theory and Absolute Instability of the Gyroresonator Higher Harmonic Gyrotron and Cusptron"

S. Ahn, A.K. Ganguly

Proceedings of the SPIE 14th International
Conference on Infrared and Millimeter
Waves, **1240**, pp. 76-77

"Final Design and Cold Test of a Harmonic Ubitron Amplifier"

H.P. Bluem, R.H. Jackson, D.E.

Pershing, H.P. Freund, J.H. Booske, V.L.
Granatstein

Proceedings of the SPIE 14th International
Conference on Infrared and Millimeter
Waves, **1240**, p. 427

"Nonlinear Theory and Design of a Harmonic Ubitron/Free-Electron Laser"

H.P. Freund, H.P. Bluem, R.H. Jackson

*Nuclear Instruments and Methods in
Physics Research*, **A285**, 169-175

"Free-Electron Lasers"

H.P. Freund, R.K. Parker

Scientific American, **84-89**

"Theoretical and Experimental Research on Free-Electron Lasers at the Naval Research Laboratory"

H.P. Freund, R.H. Jackson, R.K. Parker,
D.E. Pershing, H.P. Bluem

Proceedings of the SPIE 14th International
Conference on Infrared and Millimeter
Waves, **1240**

"Optimization of the Efficiency in Gyro-BWO Via Tapered Axial Magnetic Field"

A.K. Ganguly, S. Ahn

Applied Physics Letters, **54**, 514-516

"Non-Linear Analysis of the Gyro-BWO in Three Dimensions"

A.K. Ganguly, S. Ahn

International Journal of Electronics, **67**(2),
261-276

"Patterning of Dispenser Cathode Surfaces to a Controlled Porosity"

C. Garner, W. Deininger, J.W. Gibson, R.E. Thomas

IEEE Transactions on Electron Devices, **36**, 158-168

"Investigation of Scandate Cathodes: Emission, Fabrication and Activation Processes"

J.W. Gibson, G.A. Haas, R.E. Thomas

IEEE Transactions on Electron Devices, **36**, 209-214

"Vacuum Microelectronics -The Electronics of the 21st Century"

H.F. Gray

Proceedings of the Electro/89 Conference, **8**(1), pp. 1-6

"Vacuum Microelectronics -It Promises Subpicosecond Switching and Terahertz Amplification"

H.F. Gray

Proceedings of the New York Long Island MTT Chapter Symposium on Emerging Technologies, J. Pierro, ed., p. 22

"Vacuum Microelectronics"

R.F. Greene, H.F. Gray, C.A. Spindt

IEDM Technical Digest, pp. 15-17

"Surface Characterization of BaO on W: 1. Deposited Films"

G.A. Haas, R.E. Thomas, A. Shih, C.R.K. Marrian

Applied Surface Science, **40**, 265-276

"Surface Characterization of BaO on W: II. Impregnated Cathodes"

G.A. Haas, R.E. Thomas, A. Shih, C.R.K. Marrian

Applied Surface Science, **40**, 277-286

"A Micro-Fabrication Compatible Wiggler Design Scalable to Sub-Millimeter Periods"

R.H. Jackson, H.P. Bluem

Proceedings of the SPIE 14th International Conference on Infrared and Millimeter Waves, **1240**, pp. 423-424

"A High Power 600 μ m Wavelength Free Electron Laser"

S.A. Kirkpatrick, G. Bekefi, A.C.

DiRienzo, H.P. Freund, A.K. Ganguly

Nuclear Instruments and Methods in Physics Research, **A285**, 43-46

"A Millimeter and Submillimeter Wavelength Free-Electron Laser"

S.A. Kirkpatrick, G. Bekefi, A.C.

DiRienzo, H.P. Freund, A.K. Ganguly

Physics of Fluids, **B1**(7), 1511-1518

"Operation and Theory of a Driven Single-Mode Electron Cyclotron Maser"

A.H. McCurdy, A.K. Ganguly, C.M.

Armstrong

Physical Review A, **40**(3), 1402-1421

"Gigatron"

P.M. McIntyre, H.M. Bizek, S.M. Elliott,

A. Nassire, M.B. Popovic, D. Rapira, C.A.

Swenson, H.F. Gray

IEEE Transactions on Electron Devices, **36**, 2720-2727

"Gyroklystron Phase Characteristics"

G.S. Park, V.L. Granatstein, C.M.

Armstrong, A.K. Ganguly, R.K. Parker

Proceedings of the SPIE 14th International Conference on Infrared and Millimeter Waves, **1240**, pp. 69-70

"Fundamental Mode Amplifier

Performance of the NRL Ubitron"

D.E. Pershing, R.H. Jackson, H.P.

Bluem, H.P. Freund

Proceedings of the SPIE 14th International Conference on Infrared and Millimeter Waves, **1240**, pp. 425-426

"The Ku-Band Ubitron Experiment at the Naval Research Laboratory"

D.E. Pershing, R.H. Jackson, H.P.

Freund, H.P. Bluem

Nuclear Instruments and Methods in Physics Research, **A285**, 56-62

"Electromagnetic Properties of a Field Emitter Array Distributed Amplifier"

P.M. Phillips, S. Smith, H.F. Gray, S.

Smith

2nd International Conference on Vacuum Microelectronics, Bath, England, **99**(7), pp. 211-216

"Nonlinear Twist-Kink Instability of a Coronal Loop"

E.G. Zaidman, T. Tajima
Astrophysical Journal, **338**, 1139

"Hemispherical Ion Acoustic Solitons"
E.G. Zaidman, N.L. Oleson
IEEE Transactions on Plasma Science,
17(24)

MICROWAVE TECHNOLOGY

"AuGe/Au Ohmic Contacts to n-Type InP by Hot-Plate Alloying"

S.C. Binari, J.B. Boos
Electronics Letters, **25**(18), 1207-1209

"InP Devices for Millimeter-Wave Monolithic Circuits"

S.C. Binari, R.E. Neidert, H.B. Dietrich
Proceedings of the SPIE, **1144**, pp. 547-549

"Negative Differential Resistance in InP JFETs"

J.B. Boos, W. Kruppa
Electronics Letters, **25**, 299

"Planar, Fully-Ion-Implanted InP Junction FETs with a Nitride-Registered Gate Metallization"

J.B. Boos, W. Kruppa, B. Molnar
IEEE Electron Device Letters, **10**, 79

"The Addition of Ni in AuZn Gate Ohmic Contacts for InP Junction Field Effect Transistors"

J.B. Boos, W. Kruppa
Journal of Vacuum Science & Technology,
B7(3), 502-504

"A New Fabrication Approach for Planar, Ion-Implanted InP JFETs"

J.B. Boos, W. Kruppa, B. Molnar
Proceedings of the SPIE, **1144**, pp. 306-311

"InP JFET Equivalent Circuit and Negative Resistance Effects"

J.B. Boos, W. Kruppa
Proceedings of the SPIE, **1144**, pp. 640-645

"Discrete Phase-Space Model for Quantum Mechanics"

F.A. Buot
in Bell's Theorem, Quantum Theory and Conceptions of the Universe, M. Kafatos, ed., (Kluwer Academic Publishers), pp. 159-162

"Investigation of Noise Sources in SQUID Electronics"

T.R. Clem, M.J. Goldstein, J.W. Purpura, L.H. Allen, J.H. Claassen, D.U. Gubser, S.A. Wolf
IEEE Transactions on Magnetics, **25**(2), 1012-1017

"NbN Based Josephson Junction With Silicon Barrier Deposited at 700C"

E.J. Cukauskas, W.L. Carter
IEEE Transactions on Magnetics, **25**, 1235

"Structural Distortions of Sputtered Niobium Nitride Films"

E.J. Cukauskas, S.B. Qadri, W.L. Carter
Journal of Applied Physics, **65**, 2053

"Semiconductor Heterostructure Nonlinear Poisson Equation"

C.M. Krowne
Journal of Applied Physics, **65**(4), 1602-1614

"The Effects of Ion Gun Beam Voltage on the Electrical Characteristics of NbCN/PbBi Edge Junctions"

A.W. Lichtenberger, M.J. Feldman, R.J. Mattauch, E.J. Cukauskas
IEEE Transactions on Magnetics, **25**, 1243

"A W-Band Channelized Monolithic Receiver"

R.E. Neidert, G.L. Lan, J.C. Chen, C.K. Pao, M.I. Herman
IEEE MTT-S Digest, **1**, pp. 103-107

"Millimeter-Wave Planar InP Schottky Diodes and Their Small-Signal Equivalent Circuit"

R.E. Neidert, S.C. Binari
IEEE Transactions on Microwave Theory and Techniques, **37**(11), 1694-1698

"Microwave Surface Resistance of Bulk Tl-Ba-Cu-O"

H.S. Newman, A.K. Singh, K. Sadananda, M.A. Iman
Applied Physics Letters, **54**, 389-390

"Propagation Characteristics of Inductively-Coupled Superconducting Microstrip"

J.M. Pond, P. Weaver, I. Kaufman
IEEE MTT-S Digest, L-30, pp. 451-354

"On the Application of Complex Resistive Boundary Conditions to Model Transmission Lines Consisting of Very Thin Superconductors"

J.M. Pond, C.M. Krowne, W.L. Carter
IEEE Transactions on Microwave Theory and Techniques, 37(1), 181-190

"Logarithmic-Periodic Contiguous-Channel Microwave Multiplexers"

C. Rauscher
IEEE MTT-S International Microwave Symposium Digest, T-3, pp. 675-678

"Heterostructure Semiconductor Device Analysis: A Globally Convergent Solution Method For The Nonlinear Poisson Equation"

G.B. Tait
Solid State Electronics, 32(5), 369-376

SURFACE MODIFICATION

"Collision Cascade Densification of Materials"

R.H. Bassel, T.D. Andreadis, M. Rosen, G.P. Mueller, G.K. Hubler
Materials Research Society Symposium Proceedings, 128, p. 151

"The $\text{Si}_{(1-x)}\text{N}_x$ Rugate"

R.H. Bassel
NRL Memorandum Report 6510

"Novel Filter Design Incorporating Asymmetrical Stripline Y-Junction Circulators"

H. How, C. Vittoria, C. Carosella
IEEE Transactions on Microwave Theory and Techniques, 37(3)

" $\text{B}_{(1-x)}\text{N}_x$ Alloy Films Prepared by Ion Beam Assisted Deposition"

C.A. Carosella, G.K. Hubler, D. Van Vechten, E.P. Donovan
Materials Research Society Symposium Proceedings, 128, pp. 79-84

"Growth Modes of Ag Deposited on Si(111) with Simultaneous Low Energy Ion Bombardment"

G.P. Chambers, B.D. Sartwell
Surface Science, 218, 55-74

"Effect of Particle-Induced Displacements on the Critical Temperature of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ "

G.P. Summers, E.A. Burke, D.B. Chrisey, M. Nastasi, J.R. Tesmer
Applied Physics Letters, 55(14), 1469

"Radiation Effects in the High T_c Superconductor $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ "

D.B. Chrisey, G.P. Summers
Nuclear Instruments and Methods in Physics Research, B43, 50-54

"Electron and Proton Radiation Effects in the High Temperature Superconductor $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ "

G.P. Summers, D.B. Chrisey, W.G. Maisch, G.H. Stauss, E.A. Burke, M. Nastasi, J.R. Tesmer
IEEE Transactions in Nuclear Science, 36, 1840

"Homogeneous and Interfacial Heat Releases in Amorphous Silicon"

E.P. Donovan, F. Spaepen, J.M. Poate, D.C. Jacobson
Applied Physics Letters, 55(15), 1516

"Near Infrared Rugate Filter Fabrication by Ion Beam Assisted Deposition of $\text{Si}_{(1-x)}\text{N}_x$ Films"

E.P. Donovan, D. Van Vechten, A.D.F. Kahn, C.A. Carosella, G.K. Hubler
Applied Optics, 28(14), 2940

"Thermal Annealing Investigation of the Optical Properties of $\text{Si}_{(1-x)}\text{N}_x$ Films Fabricated by Ion Beam Assisted Deposition"

E.P. Donovan, C.A. Carosella, D. Van Vechten
Materials Research Society Symposium Proceedings, 128, p. 501

"Atomic Profiles and Electrical Characteristics of Very High Energy (8-20 MeV) Si Implants in GaAs"
P.E. Thompson, H.B. Dietrich, J.M. Eridon, T. Gresko
Materials Research Society Proceedings, 128, p. 665

"Derivation of Many-Body Potentials for Examining Defect Behavior in BCC Niobium"
J.M. Eridon, S. Rao
Materials Research Society Proceedings, 141

"The Influence of Defect Concentrations on Migration Energies in AgZn Alloys"
T.D. Andreadis, M. Rosen, J.M. Eridon, D.J. Rosen
Materials Research Society Symposium Proceedings, 128, p. 175

"Diffusion in Irradiated AgZn Alloys using Defect-Concentration Dependent Migration Energies"
T.D. Andreadis, M. Rosen, J.M. Eridon
Materials Research Society Symposium Proceedings, 128, p. 201

"Derivation of Many-Body Potentials for B.C.C. Metals"
J. Eridon, S. Rao
Philosophical Magazine Letters, 59(1), 31-35

"An Embedded Atom Analysis of Au Clusters on a Ni Surface"
C.M. Gilmore, J.A. Sprague, J.M. Eridon, V. Provenzano
Advanced Materials Conference -II
Proceedings, Denver CO, March

"A Thermal Spike Analysis of Low Energy Ion Activated Surface Processes"
C.M. Gilmore, A. Haeri, J.A. Sprague
Materials Research Society Proceeding, 128, p. 163

"Embedded-Atom Study of the Spontaneous Formation of Misfit Dislocations"
C.M. Gilmore
Physical Review B, 40(9), 6402

"Non-Rutherford Elastic Backscattering for Light Element Cross Section Enhancement"
C.R. Gossett
Nuclear Instruments and Methods in Physics Research, B40/41, 813-816

"Reactive-Element Effect Studied using Ion Implantation"
W.E. King, K.S. Grabowski
in Environmental Degradation of Ion and Laser Beam Treated Surfaces, (The Minerals, Metals and Materials Society), p. 277

"Rutherford Backscattering Study of High Temperature Oxidation of Y Implanted Fe-24Cr"
W.E. King, K.S. Grabowski, D.F. Mitchell, P.M. Baldo
Lawrence Livermore National Laboratory UCRL-99299, (Plenum Pub.)

"Cell Adhesion to Ion Implanted Titanium"
K.S. Grabowski, C.R. Gossett, F.A. Young, J.C. Keller
Materials Research Society Symposium Proceedings, 110, p. 697

"Epitaxial Growth of Ni on Si by Ion Beam Assisted Deposition"
K.S. Grabowski, R.A. Kant, S.B. Qadri
Materials Research Society Symposium Proceedings, 128, p. 279

"X-ray Diffraction from Ion Implanted Zones"
S.I. Rao, C.R. Houska, K. Grabowski, J. Claaussen, G. Ice, A. Habenschuss
Materials Research Society Symposium Proceedings, 138, p. 87

"Thermal Stability of Silicon Nitride Coatings Produced by Ion Assisted Deposition"
K.S. Grabowski, A.D.F. Kahn, E.P. Donovan, C.A. Carosella
Nuclear Instruments and Methods in Physics Research, B39, 190-193

"Passivity and its Breakdown as Influenced by Ion Beam Alloying"
P.M. Natishan, E. McCafferty, G.K. Hubler

in *Environmental Degradation of Ion and Laser Beam Treated Surfaces*, (The Minerals, Metals and Materials Society), p. 167

"Ion Beam Assisted Deposition of Titanium Nitride"

G.K. Hubler, E.P. Donovan, R.A. Kant, D. Van Vechten
Materials Research Society Proceedings, 128, p. 55

"Fundamentals of Ion-Beam-Assisted Deposition: Technique and Film Properties"

G.K. Hubler
Materials Science and Engineering, A114

"Localized Corrosion Behavior of Aluminum Surface Alloys Produced by Ion Implantation and Ion Beam Mixing"
P.M. Natishan, E. McCafferty, G.K. Hubler

Materials Science and Engineering, A116, 41-36

"Characterization of TiN Films Prepared by Ion Beam Assisted Deposition"

A.L. Chang, R.A. Kant
Materials Research Society Symposium Proceedings, 128, p. 433

"The Causes of Property Variations of IBAD-Titanium Nitride"

R.A. Kant, S.A. Dillich, B.D. Sartwell, J.A. Sprague
Materials Research Society Symposium Proceedings, 128, p. 427

"Ion Induced Charge Collection in GaAs MESFETs"

A. Campbell, A. Knudson, D. McMorrow, W. Anderson, J. Roussos, S. Espy, S. Buchner, K. Kang, D. Kerns, S. Kerns
IEEE Transactions on Nuclear Science, NS-36

"Rise Time Spectroscopy of Nuclear Radiations in a CsI(Tl) Scintillator"

P. Harihar, A.R. Knudson, W.J. Stapor, A.B. Campbell

Nuclear Instruments and Methods in Physics Research, A283, 62-66

"Structural Stability of $ZrO_2-Al_2O_3$ Thin Films Deposited by Magnetron Sputtering"

S.B. Qadri, C.M. Gilmore, C. Quinn, E.F. Skelton, C.R. Gossett
Journal of Vacuum Science & Technology, A7(3), 1220

"Phase Stability of $ZrO_2-Al_2O_3$ Thin Films Deposited by Magnetron Sputtering"

S.B. Qadri, C.M. Gilmore, C. Quinn, E.F. Skelton, C.R. Gossett
Physical Review B, 39(9), 6234

"Influence of Ion Beam Activation on the Mode of Growth of Cu on Si(100)"

B.D. Sartwell
Journal of Vacuum Science & Technology, A7(4), 2586

"Metallurgical Coatings 1989"

B. D. Sartwell, ed.
Proceedings of the 16th International Conference on Metallurgical Coatings, San Diego CA

"Processing and Characterization of Materials using Ion Beams"

L.E. Rehn, J. Greene, F.A. Smidt, eds.
Materials Research Society Symposium Proceedings, 128

"Coatings for Space Applications: An Assessment of R&D Needs"

F.A. Smidt, B.J. Faraday, R.A. DeMarco, B.D. Sartwell, G.K. Hubler, C.A. Carosella
NRL Memorandum Report 6537

"Ion Beam Assisted Deposition of Thin Films and Coatings"

F.A. Smidt
in *Structure-Property Relationships in Surface-Modified Ceramics*, (Kluwer Academic Publishers), pp. 417-454

DYNAMICS OF SOLIDS

"Application of a Model for Treatment of Time Dependent Effects on Irradiation of Microelectronic Devices"

D.B. Brown, W.C. Jenkins, A.H. Johnston
IEEE Transactions on Nuclear Science, 36

"Interface Trap Formation via the Two-Stage H⁺ Process"

N.S. Saks, D.B. Brown
IEEE Transactions on Nuclear Science, 36

"X-ray Spectroscopy of Laser-Produced L-Series Lines"

P.G. Burkhalter, D.A. Newman, J.P. Knauer
Journal of the Optical Society of America, B6(11), 1964

"X-ray Performance of Multilayer Diffraction Diagnostics"

P.G. Burkhalter, R.K. Freitag, J.V. Gilfrich, D.B. Brown, H.B. Rosenstock
NRL Memorandum Report 6574

"X-ray Spectra Produced by NaF Implosions"

G. Mehlman, D.A. Newman, P.G. Burkhalter
NRL Memorandum Report 6575

"X-ray Performance of Multilayer Diffraction Diagnostics"

P.G. Burkhalter, R.K. Freitag, J.V. Gilfrich, D.B. Brown, H.B. Rosenstock, J.L. Wood
Proceedings of INWET '89-Monterey CA

"EXAFS of Potassium Niobate at Various Temperatures"

K.H. Kim, W.T. Elam, E.F. Skelton
NSLS Annual Report

"The Random Nature of Energy Deposition in Gate Oxides"

M.A. Xapsos, R.K. Freitag, E.A. Burke, C.M. Dozier, D.B. Brown, G.P. Summers
IEEE Transactions on Nuclear Science, NS-36

"Structural Characterization of Molecular-Beam Epitaxially Grown Zn_(1-x)Mn_xSe on GaAs(001) Substrates"

S.B. Qadri, N. Samarth, J.K. Furdyna
Journal of Applied Physics, 66(8), 3622

"Characterization of Thin Boron-Doped Silicon Membranes by Double-Crystal X-ray Topography"

D.I. Ma, S.B. Qadri, M.C. Peckerar, M.E. Twigg
Journal of Vacuum Science & Technology, B7(6), 1594

"Thin Film Diamond Prepared by a Simple, Flash-Evaporation Technique"

S.B. Qadri, E.F. Skelton, M.Z. Harford, P. Lubitz, M. Twigg
ONR Diamond Technology Initiative Symposium Proceedings, July, p. TP10

"High-Pressure Investigation of Hg_{0.91}Mn_{0.09}Te"

S.B. Qadri, E.F. Skelton, A.W. Webb, L. Colombo, J.K. Furdyna
Physical Review B, 40(4), 2432

"Multilayer-Coated Blazed Grating Performance in the Soft X-ray Region"

J.C. Rife, W.R. Hunter, T.W. Barbee, Jr., R.G. Cruddace
Applied Optics, 28(15), 2984

"Multilayer Diffraction Gratings: Application to Synchrotron Radiation Instrumentation"

T.W. Barbee, Jr., J.C. Rife, W.R. Hunter, R.G. Cruddace, P. Pianetta
Proceedings of the SPIE 1160 X-ray/EUV Optics for Astronomy and Microscopy, 1160, p. 636

"X-ray Fluorescence Analysis of Tree Rings"

J.V. Gilfrich, N.L. Gilfrich, E.F. Skelton, J.P. Kirkland, D.J. Nagel
NSLS Annual Report

"Novel Techniques for the Preparation of Synthetic Diamond"

E.F. Skelton, A.W. Webb, S.B. Qadri, E.R. Carpenter, Jr., M.Z. Harford, P. Lubitz, M. Twigg

ONR Diamond Technology Initiative Symposium Proceedings

"Production of Synthetic Diamond using Conventional High Pressure/High Temperature Procedures with Flame Grown Diamond as Seeds"

A.W. Webb, E.F. Skelton, S.B. Qadri, E.R. Carpenter, Jr

ONR Diamond Technology Initiative Symposium Proceedings, p. TP12

"High Pressure-High Temperature Synthesis of New Cu-Based Oxides"

A.W. Webb, E.F. Skelton, S.B. Qadri, E.R. Carpenter, Jr., M.S. Osofsky, R.J. Soulen, V. LeTourneau

Physica C, **162-164**, 899-900

"Subnanosecond X-ray Diffraction from Laser-Shocked Crystals"

J.S. Wark, R.R. Whitlock, A.A. Hauer, J.E. Swain, P.J. Solone

Physical Review B, **40(8)**, 5705

COMPLEX SYSTEMS THEORY

"Magic Strains in Face-Centered and Body-Centered Cubic Lattices"

L.L. Boyer

Acta Crystallographica, **A45**, FC29

"Ferroelectricity in Perovskitelike NaCaF₃ Predicted *ab initio*"

P.J. Edwardson, L.L. Boyer, R.L. Newman, D.H. Fox, J.R. Hardy, J.W. Flocken, R.A. Guenther, W. Mei
Physical Review B, **39(13)**, 9738

"Calculation of Dielectric Susceptibility for Complex Ionic Systems: Application to a Predicted Superlattice"

J.L. Feldman, L.L. Boyer, P.J. Edwardson, J.R. Hardy
Physical Review B, **40(6)**, 4105

"Vibrational Contributions to Roughening. A Study for the (111) and (100) fcc Lennard-Jones Systems"

J. Wang, J. Broughton
Journal of Crystal Growth, **98**, 345

"Path-Integral Monte Carlo Study of the Neon Liquid-Vapor Interface"

J.Q. Broughton, F.F. Abraham, J.A. Barker
Physical Review A, **40(2)**, 924

"Simulation of Silicon Clusters and Surfaces via Tight-Binding Molecular Dynamics"

F.S. Khan, J.Q. Broughton
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4th International Conference on Supercomputing, **2**, p. 83

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Astrophysical Journal, **338**, 1176-1183

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Journal of Physics: Condensed Matter, **1**, 8359-8368

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Proceedings of the SPIE, Raman Scattering, Luminescence, and Spectroscopic Instrumentation in Technology, **1055**, p. 181

"Tight-Binding Hamiltonians"

D.A. Papaconstantopoulos
in *Alloy Phase Stability*, (Kluwer Academic Publishers), pp. 351-356

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D.A. Papaconstantopoulos
Journal of Superconductivity, **2**(2), 317

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in *Atomistic Simulation of Materials*, (Plenum Pub.), p. 79

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Materials Science Forum, **37**, 199-210

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Physical Review B, **39**(3), 1581

- "Studies of C-H Radicals and their Behavior Near the Hydrogenated Diamond (111) Surface"
M.R. Pederson, K.A. Jackson, W.E. Pickett
Technology Update on Diamond Films, Materials Research Society
- "Pseudopotential Methods in Condensed Matter Applications"
W.E. Pickett
Computer Physics Reports, 9(3), 115
- "Accurate Tight-Binding Studies of Antiferromagnetic States in La_2CuO_4 "
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Materials Research Society Symposium Proceedings, 141, p. 109
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W.E. Pickett, D. Singh, D.A. Papaconstantopoulos, H. Krakauer, M. Cyrot, F. Cyrot-Lackmann
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J. Ashkenazi, W.E. Pickett, H. Krakauer, C.S. Wang, B.M. Klein, S.R. Chubb
Physical Review Letters, 62(17), 2016
- "Correlation in Metallic Copper Oxide Superconductors: How large is it?"
W.E. Pickett, H. Krakauer, R.E. Cohen, D. Singh, D.A. Papaconstantopoulos
Proceedings of the 3rd Annual Conf. on Superconductivity and Applications, p. 1
- "Electronic Structure of the High-Temperature Oxide Superconductors"
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Reviews of Modern Physics, 61(2), 434
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D. Singh, W.E. Pickett, H. Krakauer
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Physical Review B, 39(8), 4921
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D. Singh
Physical Review B, 40(8), 5428

**"Temperature Dependent Positron-
Electron Momentum Densities in
YBa₂Cu₃O_(7-x) by 2D ACAR"**

**E.C. von Stetten, S. Berko, X.S. Li, L.F.
Schneemeyer, J. Brynestad, D. Singh, H.
Krakauer, W.E. Pickett, R.E. Cohen
in *Positron Annihilation*, L. Dorikens-
Vanpraet, M. Dorikens and D. Segers, eds.,
(World Scientific Press), p. 913**

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A handwritten signature in black ink, appearing to read "R. B. Rathi", with a horizontal line extending from the end of the name.

Associate Director of Research for
Materials Science and Technology Division